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INDEX.

- ALPINE** plants, list of, 98
Anemones, 23
Annuals, 22, 32, 42, 47, 54, 60, 63
 list of, 93
Aphides, 124
Apples, 51, 63
 to keep, 65
Apple-trees, canker in, 137
Apricots, 40, 46, 54
April, Work for, 26
Aquilegia, 48
Artichokes,
 Chinese, 12, 13
 Globe, 12, 26, 58, 74
 Jerusalem, 11, 12, 74
Asparagus, 1, 26, 35, 43, 74
Aspidistra, 142
August, Work for, 56
Auriculas, 23, 32, 42, 63

BASTARD-TRENCHING, 70
Beans, Broad, 2, 3, 12, 26, 35, 43, 75
 Kidney and Runner, 26, 35, 43, 53
Bedding, spring, 65
 winter, 65
Beet, 27, 35
 to pickle, 144
Begonias, 25
Biennials, 32, 49
 list of, 94
Black-fly, 124
Borage, 24
Bordeaux mixture, 136
Borecole, 27, 35, 44, 52, 58
Bouquets, flowers for, 100
Box-edging, 64
Broccoli, 13, 35, 44, 52, 58, 80

Brussels Sprouts, 13, 27, 35, 44, 58,
Budding roses, 48, 56 75
Bulbs, 47, 54, 60, 64, 68
Butter Beans, 35, 144

CABBAGE, 2, 3, 14, 27, 36, 44, 52,
 58, 62, 66, 75
Cactus, 63
Calceolarias, 48, 64
Canker in Apple-trees, 137
Cannas, 78
Canterbury Bell, 32, 94
Carnations, 24, 32, 48, 60
 layering, 54, 60
Carrots, 14, 27, 37, 44, 58, 66
Cauliflower, 15, 37, 52, 58, 62, 66, 75
Celeriac, 44
Celery, Sorts of, 82
 culture of, 15, 27, 37, 44, 52, 59,
 62, 66
Celery-fly, 124
Cherries, 54, 76
 black-fly on, 46
Chicory, 37, 80
Chives, 4
Chrysanthemums, 10, 24, 32, 42,
 48, 56, 60, 63, 68, 110
 border, 48, 110
 bush plants in pots, 111
 for exhibition, 112
 rust, 114
Climbing plants for walls, 102
Clubbing, 51, 137
Cockchafers, 129
Codlin moth, 132
Coleworts. *See* Cabbage.
Colour, contrast and harmony of,
 92

Cooking fruit, 147
 Cooking vegetables, 144
 Crane-fly, 127
 Creepers, 42, 142
 Cress, 27, 44
 Crocus, 64
 Cropping, 10
 Croquet lawn, dimensions and plan of a, 118
 Crosnes. *See* Artichoke, Chinese.
 Cucumbers, 16, 27, 37, 53, 59
 Curled Greens, 26
 Currants, 41, 54, 66, 76
 pruning, 66
 Currant-bud mite, the, 128
 Cuttings, 32, 43, 58, 60, 63, 64

DADDY LONG-LEGS, 127
 Daffodils, 65
 Dahlias, 24, 32, 42, 48, 56, 60, 64, 78
 December, Work for, 78
 Dwelling-rooms, plants for, 142

EDGINGS, 64
 Eelworms, 135
 Endive, 44

FEBRUARY, Work for, 3
 Finger and toe, 51
 Flowers, 2, 8, 22, 32, 42, 47, 54, 60,
 63, 68, 77, 80, 100
 list of, 92
 in windows, 138
 in pots, 140
 Fowls, 151
 Frame, turf, how to make a, 27
 Fruit, 7, 20, 31, 40, 46, 54, 59, 63, 66,
 cookery, 147 76, 80
 storing, 64
 Fruit-trees, List of, 83
 Fuchsias, 48
 Fungous attacks, 135

GERANIUM. *See* Pelargonium.
 Germination, 12
 Gladiolus, 33, 42
 Gloxinia, 25
 Gooseberry, 41, 47, 54, 66, 76
 borer, the, 133
 list of, 90
 pruning, 66
 saw-fly, 126

Grafting, 21
 Grape Vines out-doors, 41, 47, 60,
 63, 76
 Grape Vines under glass, 114
 Green-fly. *See* Aphides.
 Greenhouse, the, 3, 25, 33, 42, 48, 56,
 60, 68, 78, 80
 HEARTSEASE. *See* Pansies.
 Hedges, 3, 43
 Herbaceous plants, 68
 See also Perennials.
 Herbs, 30, 43
 High-moulding, 135
 Hollyhock, 32, 68
 Honesty, 68
 Horse-radish, 16
 Hyacinths, 78
 Hydrangeas, 42, 56

INSECTS, 123

JANUARY, Work for, 1
 July, Work for, 50
 June, Work for, 43

KAIL. *See* Borecole.
 Kidney beans. *See* Beans, Kidney.

LAWNS, 10, 34, 62
 Layering, 54
 Leaf-miner, a, 133
 Leaves, functions of, 33
 Leeks, 16, 37, 46, 59
 Lettuce, 16, 29, 38, 46, 53, 59, 62, 66
 Lettuce-fly, 125
 Lobelias, 68

MAGPIE-MOTH, 126
 Manures, 1, 119
 Manuring, combined animal and
 chemical, 121
 March, Work for, 10
 Marguerite fly, 133
 Marjoram, 38
 May, Work for, 33
 Mignonette, 33
 Mildew, 135
 Millepedes, 129
 Mint, 16
 Montbretias, 24
 Moth, the codlin, 132
 the winter, 127

Mulching fruit-trees, 80
Mushroom, To pickle, 146
Mustard and cress, 27, 37, 44

NARCISSUS, 65
Nasturtium. *See* Tropæolum.
Nectarines, 47, 54
Nitrate of ammonia, 120
Nitrate of potash, 120
November, Work for, 69

OCTOBER, Work for, 64
Onion-fly, 125
Onions, 4, 16, 29, 38, 46, 53, 59, 62,
66, 80

Potato, 53
Orchids for amateurs, 142

PANSIES, 42, 56, 60
Parsley, to sow, 18, 53, 59
Parsnips, to sow, 18, 66
Peaches, 47, 54
disbudding, 31
Pears, 41, 47, 54, 63
Pear-tree slug-worm, 133
Peas, culinary, 2, 6, 18, 20, 29, 38,
41, 46, 53, 75
sweet, 22, 56

Pelargoniums, 43, 56, 60, 140, 141
Perennials, 49, 68
list of, 95

Phlox, 24
Phosphate of ammonia, 120
Pigs, 149

Pinks, 43, 50, 56, 60, 64
Pipings, 56

Planting, 34, 72
Plants for dwelling-rooms, 142
Plums, 54, 59

Potato disease, 135
Potatos, culture, 6, 18, 29, 38, 46,
53, 62, 66, 76

propagating varieties of, 102
Potato Onions, 53, 80, 83
Pot-plants for each season, 140
Potting, 139
Propagation. *See* Cuttings.
Pruning, 66, 70, 116
root, 72

RADISHES, 6, 20, 29, 38, 46, 53
Ranunculus, 25

Raspberries, 41, 59
planting, 67
Raspberry miner, 126
Red spider, 124
Rhubarb, 6, 20, 76
Rock plants, list of, 98
Root pruning, 72
Rose budding, 48, 56
Rose-cuttings, 63
Roses, 10, 33, 56, 63, 68, 78
Rotation of crops, 10

SAVORY, 38
Savoys, 30, 58, 75
See also Cabbage.
Scarlet-runner.
See Kidney beans.

Sea-kale, 6, 30, 76
Seeds, 1, 61, 64
Seed-sowing, 12
September, Work for, 61
Shallots, 6
Shows, Amateurs' and Cottagers',
Shrubs, Evergreen, 65 137
Shrubs, Flowering, 77
Slips. *See* Cuttings.
Snowdrops, 64
Soup, To make, 149
Spider, Red, 124
Spinach, 20, 40, 53, 59, 61, 63, 66
Stocks, 43, 56, 61
Strawberries, 6, 7, 8, 9, 41, 54, 60,
61, 63, 67

list of, 92
Succulents, 140
Summer Savory, 38
Sweet Peas, 56
cultivation of, and choice varieties, 108

TABLE DECORATION, FLOWERS
FOR, 100

Tennis Court, the dimensions and
plan of a, 117
Thrips, 130
Tillage, beneficial action of, 69
Tomatos, 5, 7, 20, 30, 39, 40, 46,
53, 62, 66

Tomato disease, 45, 46
Tools, garden, 122
Trenching, bastard, 70

Tropæolum, 38

Tulips, 33, 47, 78

Turf-frame, 27

Turnips, 21, 30, 40, 46, 53

VEGETABLE MARROW, 40

Vegetable cookery, 144

Vegetables, 2, 3, 12, 26, 34, 43, 52,

58, 62, 66, 74, 80

select list of, 81

Vines, out-doors, 41, 47, 54, 60, 63,

76

Vines under glass, 114

Violas, 33, 50, 56

WALL-FLOWER, 43, 50

Wasps, 59

Watering, 43, 50

plants in pots, 138

Weeds, 26

Weevils, 129

Window boxes, 141

Window-plants, 138

Winter-moth, 127

Wire-worms and millepedes, 129

ILLUSTRATIONS.

	PAGE
Aphides	123
Apple, Barnack Beauty	86
" Cellini	87
" Charles Ross	85
" Cox's Orange Pippin	84
" Golden Noble	88
Artichoke, Chinese, Tubers of the	13
" Jerusalem, Tubers of	11
Auricula, The Florists' Ideal	23
Bouquet of Roses	100
Broccoli, Sutton's Continuity	15
" Veitch's Model	14
Budding Roses, Illustrations of	49
Canker on Apple-Tree	136
Carnation Plant, Layering a	55
Carrot, "Scarlet Model"	36
Celery Fly, The	124
Chrysanthemum maximum	95
" Miss Elsie Fulton	113
" Rust	115
Club-root Disease in Cabbage Plants, &c.	51
Codlin Moth and Grub, The	131
Crane Fly, The	127
Croquet Lawn, Plan of a	118
Currant Bud-mite, The	128
Gooseberry Borer, The	132
" Langley Beauty	57
" Plant trained as a Pyramid	77
" " trained "Cup Shape"	79
" Cordon	75
Grafting Fruit-Trees	21
Herbaceous Flowering Plants in Garden	97
Jasminum angulare growing against a Wall	103

	PAGE
Layering a Carnation Plant	55
Leaf Miner in Marguerite	134
Lettuce Fly and Grub	125
Magpie Moth	126
Millepedes	129
Montbretia, Corms in	25
Moth, The Winter	127
Odontoglossum crispum, A Handsome Flower of	143
" pescatorei, A White variety of	144
Onion Fly and Grub	125
Onions, Samples of, Showing Effects of Manuring	17
Parsnips, A Good Selection of Hollow Crown	19
Peach Shoot, A Disbudded	31
Pear, Bergamotte d'Esperen	89
" Beurré Clairgeau, on Quince Stock	73, 74
" Beurré Hardy, on Quince Stock	72
" Emily d'Heyst, on Quince Stock	71
" Slug-worm	135
Plum, The Jefferson	91
Potatos, Illustrations of Propagating	104, 105, 106, 107
Raspberry Canes, Methods of Training	67
Raspberry-leaf Miner	126
Red Spider	124
Rosc, Green Chafer of the	130
" budding	49
Shallot, Specimen of Egyptian	4
Strawberry, President Loubet	6
" Mentmore	7
" Royal Sovereign	8
" St. Antoine de Padoue	9
" Plants, Growing in a Barrel	41
" " Good and Bad Planting of	61
Sweet Peas Flowering in Mr. Davis' Glasshouse in May	109
Tennis Court, Plan of a	117
Thrips	130
Tomato Fruits affected with "Black Spot" Fungus (<i>Cladosporium lycopersici</i>)	45
Tomato Lister's Prolific in a pot	5
Tomatos Fruiting in Open Garden	39
Weevils, Black and Clay-coloured	129
Winter Moth	127
Wistaria in bloom on a Wall	101

JANUARY.—MEMORANDA.

FEBRUARY.—MEMORANDA.

MARCH.—MEMORANDA.

APRIL.—MEMORANDA.

MAY.—MEMORANDA.

JUNE.—MEMORANDA.

JULY.—MEMORANDA.

AUGUST.—MEMORANDA.

SEPTEMBER.—MEMORANDA.

OCTOBER.—MEMORANDA.

NOVEMBER.—MEMORANDA.

DECEMBER.—MEMORANDA.

THE CALENDAR OF GARDEN OPERATIONS.

JANUARY.

ACCORDING to the calendar the year begins in January, but for garden purposes November is a better starting point.

The out-of-door work to be done in this month will be but slight, and the weather may altogether prevent it from being carried out; but should it be free from hard frosts and excessive rains, refer to what is recommended to be done in November and December, where information will be found as to trenching, pruning, and other operations best done at that season, and try to bring up arrears.

Carefully estimate the quantity of seeds that will be required and send the order early in the month, that you may get the prompt attention seedsman are able to give to the earliest orders.

Fruit-tree pruning should have been quite finished before January 1, but if any of this work remains to be done now, let it be pushed forward as quickly as possible. Gather up the prunings and burn them, and if the trees need to be treated with an insecticide the work may be done as soon after the pruning is finished as may be convenient. Remove dead branches and weak and crowded shoots from Shrubs, and prune any strong-growing species that may need it, taking care to observe whether the flower-buds are formed on the old or the newest wood. If the Shrubbery is overcrowded, thin out the plants by removing some of the commoner and less attractive species.

In warm, well-drained soils, Asparagus beds may be afforded a thick mulch with manure, and subsequent rains will wash the nutritive qualities down to the roots. We have found, however, that in some gardens in cold districts the practice has been harmful, and the roots of the plants have decayed. In such instances the sun's rays will do more good than the manure, and the necessary food may be applied by means of chemical manures.

The protection of choice plants will now require particular care; as the sun gains power injury by frost becomes more serious. Any creeper on the cottage, as a Vine, Passion-flower, Virginian Creeper, Clematis,

that flowers on the young wood, or Honeysuckle, may be pruned and neatly trained. Water plants in pots sparingly, and then only in the morning.

VEGETABLES.*

Broad Beans.—If none were sown in autumn, or the seeds have perished, sow seeds about the end of this month for transplanting in March. The varieties Early Mazagan, Dwarf Fan, Johnson's Wonderful, and Seville Longpods are earliest, and the larger Longpods, including Sutton's Green Giant and Windsor varieties, will afford a succession. If there is a frame, or a temporary one can be made, a little time may be gained by sowing the seeds in it.

Cabbage.—Towards the end of the month, if the weather is open and mild, gaps in those autumn-planted may be made up, and a few of the largest plants of Enfield Market, Ellam's Early, or Early Heartwell, set one foot apart for earliest use.

Peas.—A sowing of Sangster's No. 1, Chelsea Gem, or William I., may be made on a sheltered border, which should have been ridged crosswise. Draw the drills within two inches of the bottom, on the warmest side of the ridge; this keeps the seed drier than if sown in the bottom. The seeds for this early crop should be sown thickly. If the whole of the border is intended for Peas, a yard between each row will be room enough; but if it is intended to crop between them with Early Potatos, Celery, Cauliflowers, or dwarf Kidney Beans, which is the better plan, then treble the distance may be left between the rows. It used formerly to be the plan to sow Peas in a plot by themselves. This should never be done, as experience teaches that two rows at a good distance apart will yield as much as three near together; seed is saved and space gained, by being enabled to crop close to them. Their place can always be filled the moment they come off. Do not sow if the weather be unfavourable.

FLOWERS.†

Should any bulbs and roots, as Hyacinths, Narcissus, Anemones, Tulips, &c., remain unplanted, choose the first open weather to get them in, planting the dwarfer kinds near the front. Those bulbs planted in October will perhaps be showing through the ground; and the choicer sorts should be protected from severe frosts and heavy rains to ensure good blooms; a layer of Fern or Spruce branches will be found suitable to protect from frost. The digging or stirring of flower-borders containing bulbs, if it was not done early last month, should, in order to avoid injuring the bulbs, be put off until they show through the ground. In watering Auriculas in pots, take care that the water does not enter the heart of the plant. Carnations, Stocks, Cinerarias, and other like plants in pits should be given the same treatment as recommended in December. If the weather is fairly good, and the garden has been planted with a view to obtaining flowers in every month possible, these short days may be brightened by the blossoms of *Jasminum nudiflorum*, *Helleborus* (Christmas Rose), *Cheiranthus alpinus*; some of the hardy bulbous Irises, and the first of the Snowdrops; the winter Aconite, &c.

* For a Select List of Vegetables, see p. 81.

† For a Select List of Flowers, see p. 92.

Violets in frames should still be affording a few blossoms. Take cuttings of *Chrysanthemums* in pots.

Greenhouse.—Amateurs who possess a greenhouse and a few frames should have a good show of *Primulas* and *Cyclamens* in bloom in the present month. Some of the hardy Alpine Plants are very pretty grown in pots, and their flowering period is thereby hastened considerably.

FEBRUARY.

If frost or snow has prevented the work recommended last month from being done, take advantage of the earliest opportunity to make up for the delay. No vacant ground should be left undug until this time, yet that which bore the crops is too often seen, in amateurs' and cottage-gardens, throughout the winter in the same weedy, rough state as when the crops were taken off; this ought never to be the case. Should the season be too far advanced to crop it with winter greens, dig or bastard-trench it [see p. 70], leaving it in ridges. A great deal more harm will be done than a short delay would occasion if the ground be trodden upon or worked when in a wet state. Short delays caused by unsuitable weather are readily made up by taking advantage of the first interval of fine weather.

If pruning has been put off, it should be done now, the pruning of the Grape-vine especially should not be delayed if it was not cut in the autumn, also Currants and Gooseberries on walls and trellises; also any transplanting, for carrying out which see directions given in **NOVEMBER**.

Creepers on the walls should be pruned and trained neatly, drooping flowered plants being trained cross-wise; Roses and others in an upright direction at regular distances apart, spurring in to an inch or less in length the weaker and superabundant shoots, but laying in those better ripened. Thorn or Privet hedges may be cut, if not already done, but it is better to carry out this operation during the season of growth, if a close and compact hedge is required.

It will be well to look forward to next month—which is a more important one—that every preparation may be now made.

In preparation for grafting Apples, Pears, Plums, or Cherries next month, cut off moderate-sized shoots of the previous year's growth, and insert them to about half their length in a north border, where they may remain until required for use as scions.

VEGETABLES.

Broad Beans.—A main sowing may be made this month of Early Mazagan, Johnson's Wonderful, Broad Windsor, Hangdown, and any good Longpods, in drills three inches deep and two feet and a half apart; but, as with Peas, detached rows, a good distance from each other and cropped between, are the best.

Cabbage.—The August-sown plants, which were pricked out, may now be finally planted; the gaps of the autumn-set should be made good, if not previously done, and the loosened soil made firm round the plants.

Those who possess warm frames may sow seeds of a quick-growing variety in pans or boxes, and prick them out into a bed in a frame, transplanting them to the open ground before they overrowd each other. These plants will afford nice young heads in early summer.

Chives may be divided for increase. This useful little plant will grow in any soil or situation, but it succeeds best in the sun, and does well

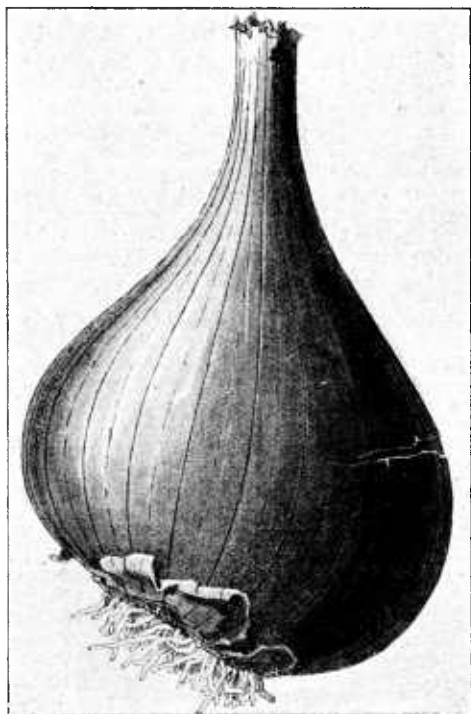


Fig. 1.—Specimen of “Egyptian” Shallot.
See p. 6.

planted as an edging to a walk ; it may be used for the same purposes as Onions early in spring, when those cannot be had, and for strewing in a finely chopped state over boiled buttered potatoes. Plant the roots three inches deep in the soil.

Onion bulbs may now be planted ; draw a drill about three inches deep for them, and set the bulbs one foot apart.



Fig. 2.—Tomato Lister's Prolific in a pot.
See p. 7.

Plant Potato-Onions and Shallots, the first two inches deep, the second merely pressing them into rich soil sufficiently deep to hold them firmly. The Egyptian Shallot shown in Fig. 1, p. 4, is larger than those commonly grown, and may be useful for exhibition.

Peas, if not put in, should be sown at the first favourable opportunity; those sown now will not be much later than the same varieties sown in November, and will exceed them in point of crop. Draw the drills wide at the bottom, and spread the seed regularly, which is better than huddling them together in narrow drills; this should be particularly attended to in sowing Marrowfats and other branching kinds, which are generally sown too thickly. Always make the soil firm before sowing. If some Peas are already through the ground, but in



Fig. 3.—New Strawberry (1903) President Loubet.

See p. 8.

bad condition, turn over the soil and sow again. Peas never afford good crops if crippled at the start.

Potatos.—A few rows of an early variety, as Sharpe's Victor or May Queen, may be sown in the warmest position available. Sharpe's Victor may be planted in frames, to afford a crop before any will be fit for use out of doors. Let the tubers be sprouted before they are planted.

Radishes.—Choose a dry and warm situation for a sowing of early Radishes. They must be covered up during severe weather, for which Fern is the best material, but any light litter will do; and must be uncovered at every favourable opportunity. The Turnip-rooted varieties are the best to sow now; and a few Paris White Cos or Drumhead Lettuces may be sown at the same time.

Rhubarb and **Sea-Kale** may be given a thicker covering with litter now, or inverted pots may be placed over them to start them into early growth.

Tomatos.—Sow seeds of the variety Lister's Prolific (Fig. 2, p. 7) in a pan filled with sandy soil, and place in a warm house.

FRUIT.*

When not done in autumn, Strawberries may now be planted, if the weather is good ; if not, delay the work until next month, choosing young runners of last autumn's growth. Plant, on well-trenched ground that has been trodden when dry, in rows two feet apart and twelve inches apart in the row, as every alternate plant can then be cut out after the

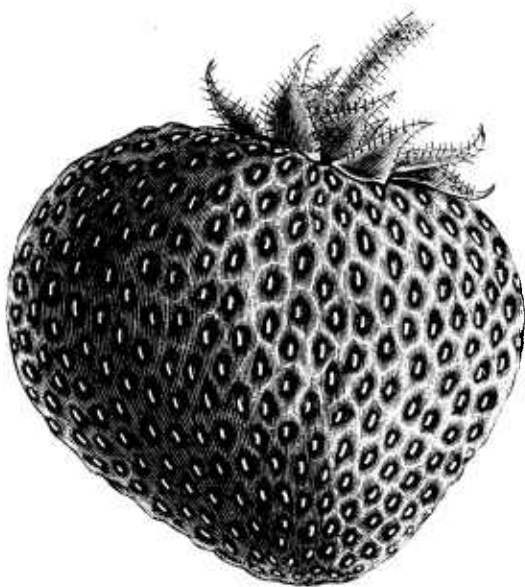


Fig. 4.—Strawberry Mentmore.

first crop has been gathered, to give more space for the remaining plants. The first season of planting a good crop of Onions may be had by planting autumn-sown kinds between the rows of Strawberries one foot apart, or Cos Lettuce may be sown and thinned out to one foot apart. The best varieties of Strawberries are Vicomtesse Héricart de Thury, Royal Sovereign, Mentmore, The Laxton, President, Sir J. Paxton, ripening in the order named, Elton Pine, British Queen, and the perpetual-fruiting

* For selected list of Fruit Trees, see p. 83.

variety St. Antoine de Padoue (see Fig. 6). Grove End Scarlet is the finest coloured variety for preserving. Messrs. Jas. Veitch & Sons have introduced a new variety named President Loubet (see Fig. 3, p. 6), of which it is too early to judge, except in respect to the flavour of the fruits, which is good. Make the soil, now loose from frost, firm by treading.

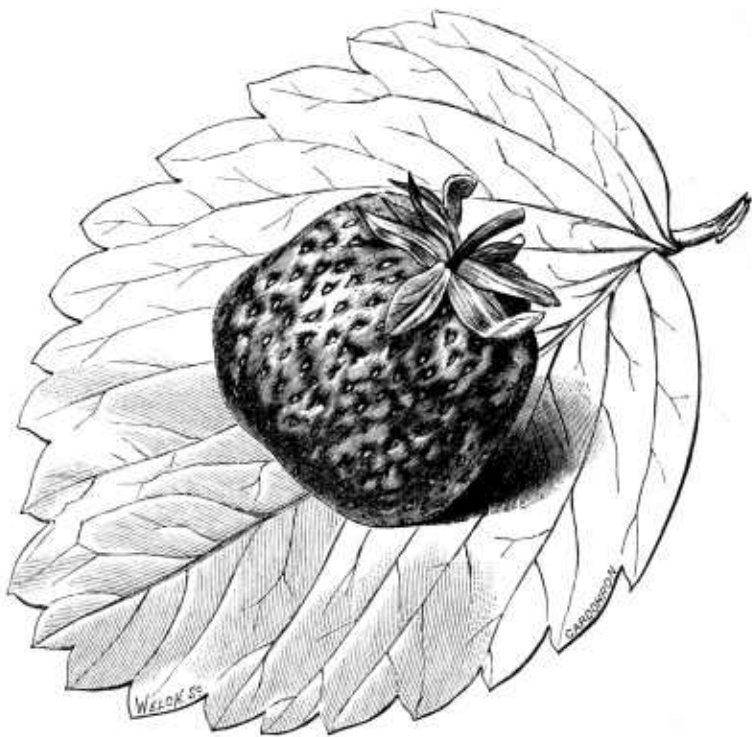


Fig. 5. Strawberry Royal Sovereign.

FLOWERS.

In favourable weather edgings of various kinds may be planted, as Box, Thrift, Daisies, Pinks, Polyanthus, and London Pride. Auriculas should be top-dressed, and, together with Carnations and other plants, should be freely exposed in mild weather. Ranunculus roots should be



Fig. 6.—Perpetual-fruiting Strawberry St. Antoine de Padoue (St. Anthony of Padua).

planted in mild weather, in rich, loamy soil. Draw neat drills about two inches deep, or throw out the soil to that depth (if a bed), and plant five inches apart; choose the roots having large full buds. Let the work be done in the first week of the month, if possible, and as in their early

state of growth they are very likely to be hurt by frost, some covering should be given if frost threatens.

Roses.—China or Monthly Roses, and those of strong growth, should now be pruned, cutting out the weaker shoots, or shortening them hard back, and preserving the others at about half their height; but do not shorten strong-growing varieties much, except those shoots intended to produce wood for next season. Roses may also be planted; the soil for them cannot be too rich.

Chrysanthemums.—Some of the earliest cuttings having made roots will need to be repotted, using soil of a light, rather sandy nature. See p. 112.

MARCH.

THE weather in this month is likely to be stormy, nevertheless it is the most important month of the year for getting in main crops of many vegetables, &c. Advantage should be taken of fine intervals, for, in respect to Onions, Carrots, and Parsnips, a great deal of success depends upon them being sown early and whilst the ground is in a dry state.

Cropping and Rotation.—We will assume that the soil has been properly prepared; there yet remains a subject which is equally important in every garden—namely, a proper rotation of crops. Although the same plot may, by being appropriately manured, produce for several years in succession good crops of Onions, it is, notwithstanding, a bad practice. The plan of continuous planting of any crop upon one piece of ground will in the end so exhaust it that no amount of manuring will again fit it for the same plants until a system of rotation cropping has been substituted. After early Potatoes any of the Cabbage tribe may be planted; all tap-rooted vegetables, as Carrots and Parsnips, for which it is wrong to apply manure at the time of sowing, should be succeeded by unlike kinds which do require dung at the time of planting, as Celery, Potatoes, and the Cabbage tribe. Let this be thought of now, that after-arrangements may not render it compulsory to plant the same ground with the same crop this year as the last. It is good practice to dress ground intended for Onions and Carrots with soot, fresh lime, and a little salt; and in filling in the drills in heavy land, to use burnt earth or decayed night-soil and fine, dry earth mixed. Where the ground has been ridged, the great advantage of the practice over flat digging will now be seen by the ease with which it is levelled in a fine light state, enabling it to be sown immediately after a short period of fine weather, whilst soil of a like kind dug flat will be wet and unfit for working.

Lawns.—After the middle of this month, and until the beginning of May, is the proper time for sowing grass seeds to make a lawn. This is a better practice than to put down turves obtained from a pasture, and containing a large number of weeds. Before sowing seeds for a lawn, it is necessary that proper drainage should be provided, unless the soil is naturally well drained, and afterwards the soil should be well worked, to free it from weeds; manures should be added at the rate of fifteen cartloads of well-rotted farmyard manure to half an acre of land. If chemical manures are preferred, use superphosphate of lime, Peruvian

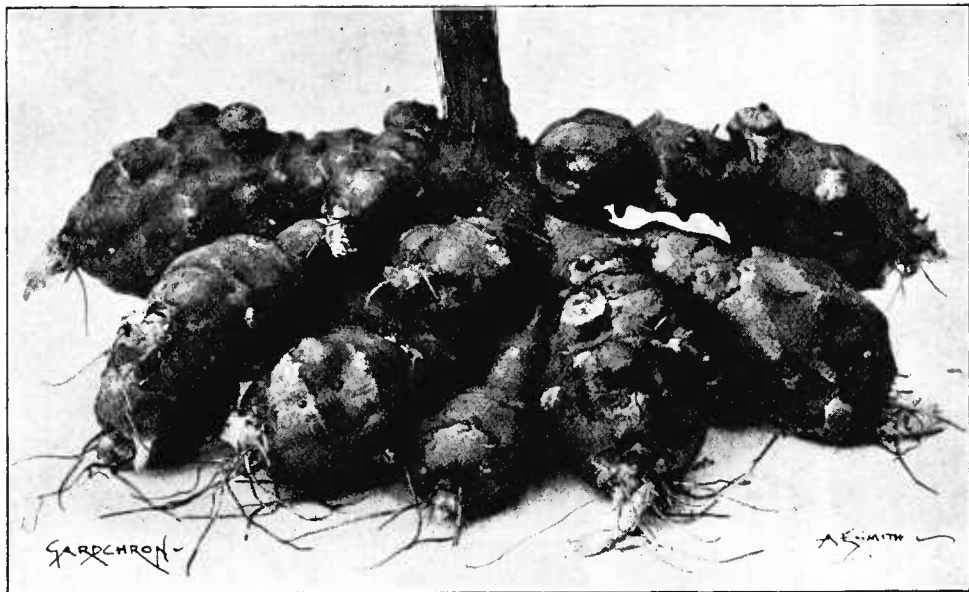


Fig. 7.—Tubers of Jerusalem Artichoke (reduced .

guano, and bone dust, or one of the special lawn manures sold by the nurserymen. The surface must then be levelled perfectly and made fine, so that the seeds may not be covered more than $\frac{1}{4}$ inch deep. About two bushels of seed will sow half an acre. When this has been done, lightly rake over the surface again and then roll it.

The Germination of Seeds. Seed Sowing.—We must look upon the mature seed in the same light as we should do in the case of a fertilised egg. Each contains a germ which will develop either into an embryo plant or a chick if the circumstances are propitious, but not otherwise. In the case of the seed the embryo plant is either surrounded with materials available for food (called the albumen), or the nutritive matter is stored up in the cotyledons or seed-leaves, and there is little or no "albumen." In the egg of a bird the white and the yolk contain the nutritive matter required for the growing embryo or chick.

In the case of the seed germination—that is, the growth of the embryo-plant—is favoured by a certain amount of air, heat and moisture. The exact amount varies according to the species, but in all cases too much or too little is deleterious. When the conditions are favourable the embryo-plant begins to grow, water is absorbed from the soil, chemical changes are set up, as a consequence of fermentation in the food-substance, and the previously inert matters are dissolved and brought into a state capable of being absorbed by the growing plant and made use of in building up its structure. The seed then, or rather the embryo-plant within it is alive. It may remain dormant for a long time, but ultimately, when the conditions prove favourable, it awakens into activity; it breathes, it absorbs food-materials, it transforms them into actual food, new tissues are formed; in a word, it grows. A seed, then, with its contained embryo, lives in the same way as the roots do, and as the cotyledons, or seed-leaves, become exposed to the light so do they assume the functions or work of leaves. It is evident, then, that in sowing seeds provision must be made for access of air, heat, and water, more or less, according to the size and nature of the seed. The preparation of the seed-bed, or of the soil in the seed-pans, the depth at which the seeds are sown, the degree of temperature and moisture afforded, are all regulated according to the facts just mentioned, and the more carefully the adjustments are made the greater will be the degree of success.

VEGETABLES.

Artichokes.—Plant whole tubers of Jerusalem Artichokes in a deep, rather rich soil. The plants require considerable room, and should be cultivated in an open, sunny position. Make preparations for sowing seed of Globe Artichokes, and if stools have been protected during the winter for affording suckers for planting next month, the protective material may now be removed. The tubers of the Crosnes, or Chinese Artichokes (*Stachys tuberifera*) (see Fig. 8), may be planted in any moderately rich, well-drained soil, and require nothing but the most ordinary care.

Broad Beans.—As early as possible get in another sowing, to succeed those planted earlier. Plant at a distance of two feet six inches from row to row, or wider if it is intended to crop between the rows. If any have been raised in frames, these may now be planted out.

Broccoli.—Sow as early as possible a pinch of Walcheren to succeed the Cauliflowers sown in autumn, the latter now being planted out. Towards the end of the month sow the later kinds, such as Snow's

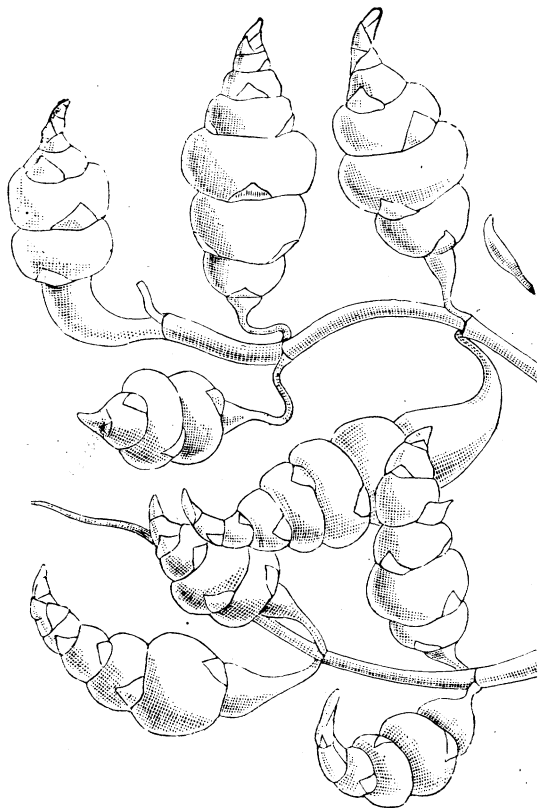


Fig. 8.—Tubers of Chinese Artichoke (*Stachys*) (real size).

See p. 12.

Winter White, Cooling's Matchless, Winter Perfection, Self Protecting, and Sutton's Late Queen; these will give a supply from November to the end of May, and even later, coming into use in the order named.

Brussels Sprouts.—Sow seeds in a well-prepared bed. This is one of the most important green vegetables for consumption in winter.

Cabbage.—In the first or second week sow a few seeds on a warm border for summer and autumn supply, or sow in boxes and prick out; they must be protected whilst young if severe weather occur. Either Enfield Market or Cannell's Defiance will be found suitable varieties. Water the seed-beds if necessary. A few Red Dutch for pickling may be sown at the same time if those put in in autumn have failed.

Carrots.—In the first open weather, a few Early Nantes or Early Horn may be sown in a warm place for use before the main crop is ready. At the latter end of the month the main crop should be sown;

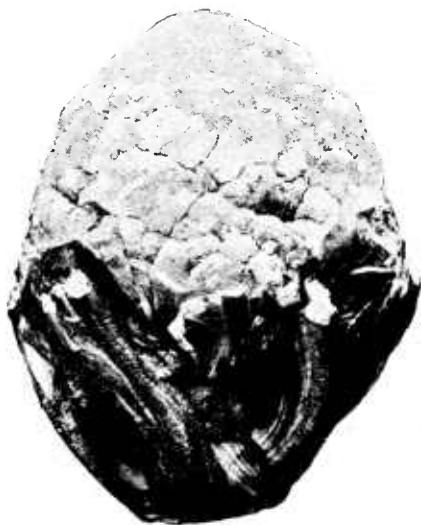


Fig. 9.—Good type of Broccoli (Veitch's Model).

a calm day must be chosen for the purpose, and the seeds which adhere to one another by their hooks should be separated beforehand by being rubbed between the hands with sand, dry soil, or ashes. The land should have been well prepared in autumn at least one foot and a half deep, for strong soil the scrapings of roads, when dry will be found an excellent dressing; and if it be well mixed in digging, it will keep the soil open and enrich it also. This may be done just before sowing, but manure should never be added at that time. The ground intended for Carrots and other tap-rooted vegetables should be prepared in the autumn, as the addition of fresh dung now would cause the roots to fork and become cankered. Drills made with a hoe an inch deep and nine inches apart are better than broadcast sowing, as the seeds are difficult

to rake in, and the earth for covering the seed should be broken very fine. Sowing in drills admits of the Dutch hoe being used much more quickly between the plants, besides securing a more regularly-disposed crop and being a saving of seed. Old roots may now be planted to produce seeds.

Cauliflower.—Sow in a warm situation Early London and Veitch's Autumn Giant; the former will come in to succeed those sown in autumn, the latter is the best for autumn use. By planting early and making successional sowings this may be had in use from the early part



Fig. 10.—Good type of Broccoli (Sutton's Continuity).

of August until Christmas. Choose a piece of the lightest and richest ground for this purpose; cover the seed lightly and evenly, and do not sow thickly. In the last week of this month the autumn-raised plants should be planted out in rich ground, and afforded water afterwards if necessary.

Celery.—Where there is a desire to have early or large Celery for exhibition, and plants cannot be procured from some large garden in the neighbourhood, sow the seed, in the absence of a dung-bed, in a shallow box filled with rich soil, and cover it lightly with mould; it may be either protected in the Cucumber-pit in April, or with hoops and a mat, or taken into the house at night, exposing it in fine weather. The best sorts are Sandringham Dwarf White, Col. Clarke's Red and

Standard Bearer, the former is early and excellent ; both the others for early and for late use. Celeriac, or Turnip-rooted Celery, is a good root for amateurs and cottagers, for home use. Seeds may be sown now in the same manner as Celery. Plant on the level in rich soil at one and a half foot apart.

Horse-Radish.—To grow fine roots, plant about two inches of the crowns in a deep trench and cover them with sifted coal ashes ; or drop the sets into deep holes made with a large dibber, and fill them up with light earth. Choose any out-of-the-way situation, as it is not easily got rid of, except by constant hoeing over for a season. It is imported from Germany in very large quantities, but might easily be grown here on railway banks or other "waste" places.

Cucumbers.—Those who may have a small span-roofed house for the cultivation of Cucumbers may procure young plants for setting out on mounds during the present month. The temperature at night should not fall below 65°, but few amateurs can provide this. Many, however, are able to cultivate cucumbers on hot-beds in frames, and for this purpose seeds may be sown now in three-inch pots containing good, but very porous soil, which should be placed in a warm, moist atmosphere. Afford water very sparingly for some time to come.

Leeks.—Sow seeds of the broad-leaved London, Musselburgh, or Holborn Model in a warm situation on the first favourable opportunity. The seed should be scattered thinly over a small bed, and be covered lightly with soil from the alley, beating it in with the head of the rake when levelling the surface ; or seeds may be drilled.

Lettuce.—A few seeds may be scattered thinly amongst the Onions and Carrots, or on a small bed by themselves—the Paris White Cos is the best ; and if Cabbage Lettuce is desired, Daniell's Continuity, Tom Thumb, or All the Year Round may be sown ; they must be protected from birds. Endeavour to obtain a few Cos Lettuce plants which have been wintered in frames to set out now in a warm rich plot.

Mint.—New plantations may be made by drawing up the young shoots with roots attached, when two or three inches long, and planting them with a dibber in rows six inches apart and four inches from plant to plant.

Onion seed should be sown about the middle of the month, or before if the weather permit ; the ground should have been bastard-trenched (see p. 70) and ridged in autumn, and manured at the same time ; therefore nothing but levelling down the ridges will be necessary now. A piece of the best ground in the garden should always be afforded to Onions. For light soil, clay, and pig or cow dung mixed, will be found the best dressing. Sowing in drills is better than broadcast, as it ensures a more regular crop, which is easier kept clean. After the ground has been levelled, proceed to draw the drills an inch deep and six or eight inches apart, missing a drill when seven have been drawn, so as to form an alley ; sow the seed immediately, and, after covering, tread it in regularly. If the ground should be in such a state as not to admit of this without binding the surface, it will be hardly prudent to sow ; but if it has been ridged, this will scarcely happen. After the plants are fairly above ground, nothing is so good for them as having the soil about them frequently stirred and kept free from weeds. The best varieties are the White Spanish or Reading, Main Crop,

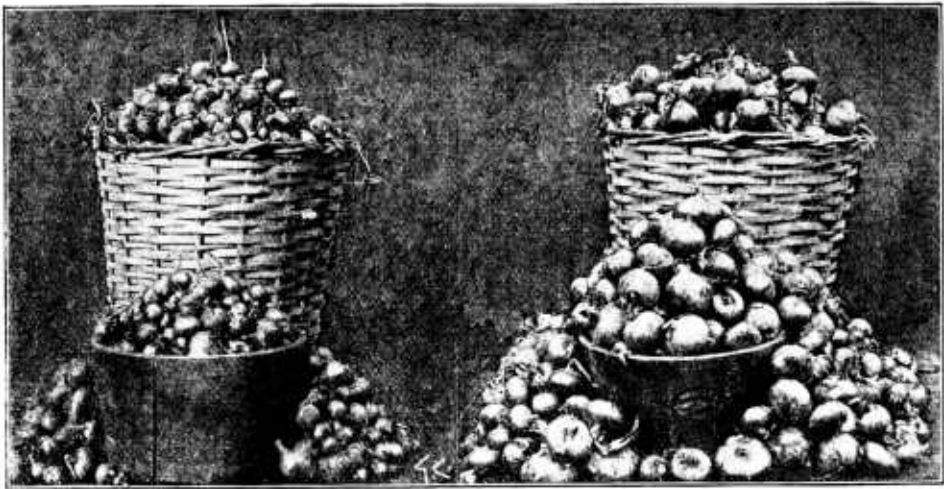


Fig. 11.—Two samples of Onions, showing the effects of Manuring (see p. 18).

Cranston's Excelsior, Brown Globe and James' Long Keeping, for the main crop, and the Queen for early use. The illustration at Fig. 11 shows the effect of high-class cultivation, including the affording of suitable manures. The ground which produced the larger bulbs was one square rod, and 1½ lb. Sulphate of Potash and 3 lbs. of Superphosphate were forked into the soil in the Autumn. Early in March seeds were sown of Fidler's Improved Reading Onion, with the result shown. The ground that produced the smaller bulbs received no dressing of any kind.

Parsley should be sown on the first favourable opportunity—the seed usually takes six or seven weeks before it makes its appearance above ground; it may be sown as an edging to the walks, or on a border. When put in for an edging, the drills should be drawn with great care and regularity about an inch deep, and three inches from the edge of the walk; if in a plot, six or eight inches apart. In covering, let the soil be well broken. When the plants are a few inches high they should be “singled” to six inches apart, being careful to pull up those bearing uncurled leaves, and as soon as the earliest leaves begin to turn yellow, a portion may be cut over close to the ground in succession; this will cause the plants to produce finer leaves, and stand the winter better. The soil for Parsley should be rich and deep, and the situation open, sunny, and well drained. If a bed of the size of a garden frame be sown, and the frame put over it and matted in hard weather, Parsley will be obtainable throughout the winter.

Parsnips.—These should be sown as early in the month as possible, in a piece next to that intended for Carrots, which may be sown later. They require similar treatment; and the drills for these should be about one-and-a-half inch deep and one foot apart; they are good for food, and profitable. They should therefore be grown largely in every garden; boiled and eaten with salt fish or meat in the winter and spring they are delicious; and cows fed with them yield a great deal of milk. In sowing them, three or four seeds may be dropped in the drills, six or eight inches apart, afterwards singling them out. The Hollow Crown, and Student Parsnips are the best. (See Fig. 12, p. 19.)

Peas.—A succession may be sown of Ne Plus Ultra, Daisy, Laxton's Supreme, Duke of Albany, Telephone, Sharpe's Queen, Telegraph, and Carter's Michaelmas; they grow from three to five feet high, and no better or more prolific Peas can be sown at this season. Earth up and stick the early kinds as soon as they are high enough; this cannot be done too soon at this season, as protection is required. In drawing drills, either make them wide at the bottom, or draw double drills, and sow thinly; the rows should range north and south if possible. (See p. 6.)

Potatos.—This is by far the most important root crop of which we have to speak. The cottager should find out from his neighbours which is the best sort to grow in his ground. The Potato is not a root, and therefore it cannot get food for itself, nor can it really grow until it has produced roots and shoots. Till then, although it may sprout, it loses instead of gaining weight, because it is feeding upon itself. It cannot begin to grow till the ground is warm enough to allow it to do so. The time of planting depends a good deal upon the locality and nature of the soil; and although they have succeeded well from the end of February to the same time in June, yet it is best not to plant either

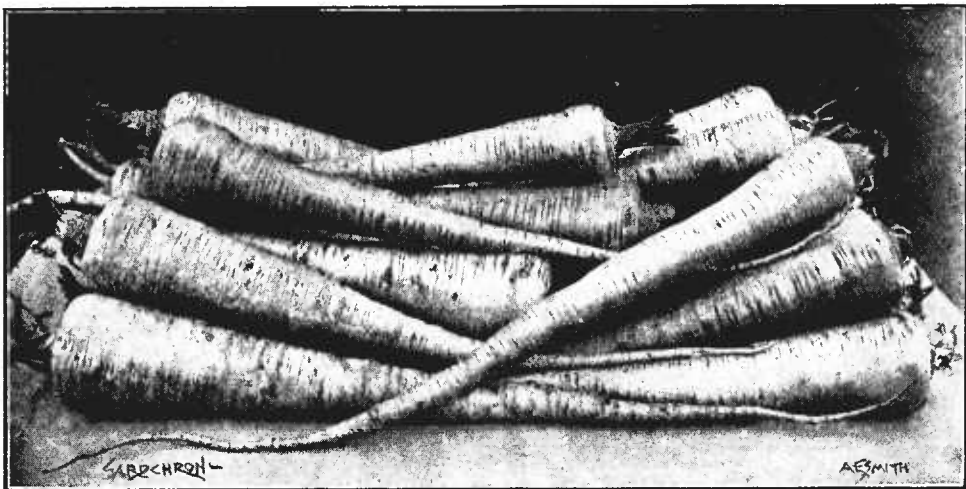


Fig. 12.—A good selection of “Hollow Crown” Parsnips (Messrs. Cannell & Sons).

very early or very late. Myatt's Prolific, Improved Ashleaf, Early Regent, Duke of York, Satisfaction, Evergood, Windsor Castle, Up-to-Date, Edward VII. (new), Reading Russet, Vicar of Laleham—a purple Kidney, first rate for table or exhibition—Discovery (new), El Dorado (new), and Northern Star (new) are all good kinds, but the varieties last mentioned are very expensive.

The sets may be planted on the flat by scooping out shallow holes with the hoe on well-dug land not heavily manured, or on such as was well manured for an earlier crop. These holes should be three to four inches deep, and two feet apart each way or even more for varieties that have tall branches, especially for Up-to-Date and Northern Star, and one foot by one-and-a-half foot for small growers like Ashleaf. The crown buds of the sets should be reduced to one or two by rubbing off the others, and the sets placed with these buds pointing upwards. Sets may be planted at the same time the land is dug, and on heavy land this is a good plan. They may also be planted in the furrows of ridged-up ground. Plant whole sets weighing from two to four ounces, rather than cut up larger tubers. Heavy land is rendered more suitable for the Potato if strawy manure be put beneath the sets by shovelling it together with the crust of soil into the bottom of the trench when bastard-trenching it in the winter, or laid in the furrow if the land to be planted is already ridged, the potato-sets being placed on the top of the manure. In light soils, manure, if it be employed at planting time, acts in the best manner when laid above the sets, covering it and the sets in the usual way with some of the fine mould from the sides of the ridges. Where space is no object, wide planting—say, from two-and-a-half to three-and-a-half feet from set to set for midseason and late varieties—gives capital results, for should disease attack the crop, the tops lying on the soil away from the tubers the falling spores are less likely to reach the latter.

Radishes.—Some seed of the Scarlet Short-top and Turnip-rooted kinds may be scattered with the main crops of Carrots, &c.; they will be fit for use before the crops can be hurt by them, but if room is no object, sow them by themselves and cover as before.

Rhubarb.—This valuable plant should find a corner in every garden, however small; and the cottager will find it useful and wholesome for himself and children, from its cooling properties. Independent of the cheap pies and tarts which are made of the stalks, they may be boiled and eaten with bread; by blanching the stalks, which is readily done, they are not only better in flavour and come to perfection earlier, but only one-half the quantity of sugar is required. To do this, it is necessary to exclude the light; a large flower-pot or an old butter-firkin will do this, or a few hazel-rods or rails covered with fern or straw, or any similar means as circumstances may allow. Rhubarb makes a good preserve with a few Turkey Figs added. If the crowns have been mulched during winter, they will be earlier.

Spinach may be sown between Peas or Beans, or by itself; but it is not a crop to be recommended at this season in a cottage-garden, being neither nourishing as food nor durable as a crop.

Tomatos, if a warm frame is at hand, may be sown in pots of loamy soil, and plunged in the bed for supplying plants for cultivation out of doors. Choose Earliest of All, Holmes' Supreme, Frogmore Prolific, and

Chemin Rouge, and sow in pans or pots and transplant them when a few true leaves have been made; or sow three or four seeds in a four-inch pot, and thin out to one or two plants. Pot on the seedlings of the variety Lister's Prolific, sown last month for cultivation in pots or borders under glass.

Turnips.—In warm situations a few of the Milan Strap-Leaf or Six Weeks' Turnip may be sown upon a south border with a view to profit, as they are usually very scarce early in the season; the border should be dug in a sloping form, and the plants be attended to regularly with water.

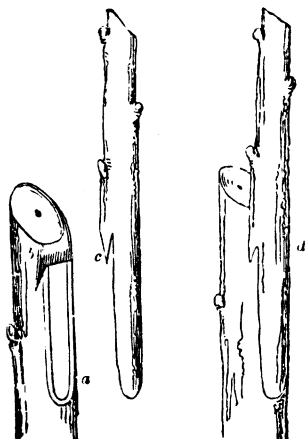


Fig. 13.—Grafting.

a, b, the stock prepared for grafting; *c*, the scion; *d*, the graft completed.

FRUIT.

Grafting.—The operation of Budding is mentioned at p. 49. Grafting is a similar process, differing only from budding in that not merely a single bud but an entire shoot or "scion" is removed and placed neatly on the surface of the "stock," cut on purpose to receive it. Some practice is required to effect the process satisfactorily, but it is always requisite that the stock and scion be from plants nearly related the one to the other, that the younger growing tissues of stock and scion be carefully adjusted one to the other, so that the passage of liquid sap from one to the other be as little impeded as possible. The precautions to be observed are essentially the same as in the case of budding. The objects of grafting are to secure more rapid propagation, or to obtain flowers and fruits more rapidly and more abundantly than would be the case were the plants "on their own roots." Tender varieties, which would not live if left to

themselves, are grafted on to hardy stocks, and are thus perpetuated. The attacks of the Phylloxera on the Vine have been frustrated by taking the scions from the best wine-producing varieties and grafting them on the stocks of certain American Vines, the roots of which are, indeed, not wholly free from insect attack, but they sustain little or no injury from them, so that the wine-growing industry, once threatened with destruction, has now been satisfactorily re-established by this process of grafting.

About the end of the month, or later, according to the season, is the proper time to commence grafting Apples, Pears, Plums, or Cherries; the grafts should have been taken off a month before, as grafting always succeeds best when the stock is growing quicker than the scion. We will endeavour to describe the operation; but seeing it once performed would teach it better. Cut over the stocks at the point where it seems the most desirable to fix the graft; then with a sharp knife make a smooth cut (*a*) (Fig. 13, p. 21) upwards, of the same width as the scion, and about an inch and a half long, just touching the wood; then make a slit downwards from the top across the cut, a quarter of an inch deep (*b*); cut the scion about four inches long, and cut the lower end slant-wise at one cut, to fit that made in the stock, making a slit at (*c*) like that in the stock; then fix the two together, making one or both the inner edges fit neatly, according to the size of the branch grafted (*d*). Nothing more remains to be done but to tie them together firmly with bast or tape, without shifting their position, and to cover the union with sticky clay which has been well beaten up with some short hay, to prevent its cracking; if a little moss be tied over the clay, and kept damp, it will prevent the cracking of the clay, and help the union. There are many different methods of grafting, but this method, which is called "tongue grafting," is the one generally chosen. Pears are grafted on the Quince stock or "Free" (Pear) stock; Apples upon the Paradise stock, to restrict growth and induce early fruiting, or on the "Free" (Apple) stock; Plums on the Mussel, or St. Julien stocks; Peaches and Nectarines on the Mussel or Brompton Plums.

Any wall-trees or dwarf Pears coming into blossom may be protected from frost with branches of Spruce Fir or fronds of Fern tied sparingly amongst the shoots, or with nets or canvas suspended from the top of the wall, and reaching to about two feet from the base.

If the amateur has Peach trees in a cold or slightly heated house or case, and the trees are covered abundantly with flowers, a few may be rubbed off whilst still unfolding; but this must only be done to a limited extent, and the proper thinning be done after the fruits are set. Even then a double crop should be left until the "stoning" period is passed because many may fall during this critical period.

Hoe the ground under Gooseberry and Currant bushes.

FLOWERS.

Annuals.—Towards the end of the month, in light soil, sow a few of the hardiest annuals; also thin out and plant some of the autumn-sown ones. Sow in small patches or in lines, and cover with a little dry soil; if garden-pots are turned over the patches, they will protect the seeds from birds and frost. Before sowing, find out the height and colour of the various species and varieties, and attend to what is said upon this subject at the head of the list of annuals, p. 93. Sow seeds of Sweet

Peas in drills, or in clumps ; the latter method will produce the better effect. They may also be sown in drills, against a wire trellis, to form a screen, where it is wished to hide any unsightly objects. The most enthusiastic cultivators sow the seeds in five-inch pots, and when the young plants have grown three or four inches high in a cool house or frame, each pot of seedlings is planted out to form a separate clump. A select list of varieties is given on p. 110. Half-hardy annuals may be sown in frames towards the end of the month. These would include Asters, Stocks, Marigolds, Godetias, Phlox Drummondi, Zinnias, &c.

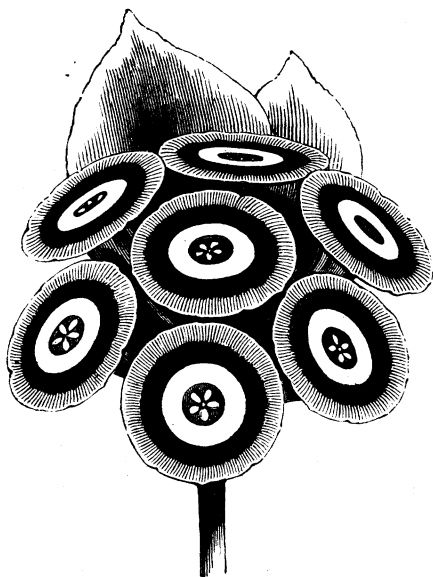


Fig. 14.—The Florists' ideal type of Auricula]

Showing the form aimed at, and the proportion that the "paste" or white ring round the tube should occupy. The flowers are thrum-eyed, that is, the stamens occupy the mouth of the tube.

Anemones.—If any roots were left over at the autumn planting they may be put in now for succession.

Auriculas.—As soon as the plants throw up their trusses of bloom pinch them all off except the strongest one ; and if any plant appears to require top-dressing or repotting, it should be done immediately ; expose them freely during the day, but above all things guard against frost, for if the buds become in the least hurt they will not come up level in the truss. When the buds are formed thin out the smallest or middle ones, leaving only as many as can open without being crowded. The above

applies to Auriculas in pots; but the plants make nice subjects for the border, flowering well. When patches of these plants have become leggy they may be earthed up or planted deeper in the soil. Transplantation may take place now; any bit with a root or two will grow. Sow seeds of Auriculas and Polyanthus in shallow pans or boxes, and press them down evenly with a piece of flat board, sprinkling a little sand over them; place them under an east aspect, and protect them from heavy rains. The Auricula may be sown out of doors with good results.

Borage.—Sow in the neighbourhood of Bees, for which no plant is better; it does not require transplanting, only thinning out.

Carnations.—Last year's layers should, towards the end of the month, be either planted out in the borders or in a bed, to flower; many growers pot them in large pots and flower them upon a stage; they delight in rich soil, composed of loam, dung, and sand. The young plants should have well-drained ground fully open to the sun, and be planted quite up to the lower leaves. Road grit is good to mix with the soil.

Chrysanthemums, intended for cultivation out of doors, may now be divided and potted in small pots, or planted out on a rich border. If thought desirable they may be taken up carefully and potted during wet weather, in the end of August, for flowering in November. If cuttings were struck in early winter these may now be planted outside, or potted and kept in frames till well rooted. Those who grow Chrysanthemums for exhibition, or in pots all the season in order to get large blooms for house decoration, should move young plants into 5-inch or 6-inch pots as soon as they are ready. (See p. 112.)

Dahlias.—Tubers that were lifted in the previous autumn, if put into heat will afford cuttings that may be rooted, and will make good flowering plants the same season. If the amateur has no heated house, or it is not desired to propagate by cuttings to increase the stock, the tubers may be started in a cool frame, and after they have made growths two inches long, they may be divided and put into boxes, or preferably pots, so that good plants may be ready for putting out at the end of May or of the first week in June. The amateur will find that the system of raising Dahlias each year from seeds has much to recommend it. Double or single flowered varieties if sown at the very commencement of March in a warm frame, or even one that is merely protected by a covering at night, will flower satisfactorily the same season, but the single flowered will come best; the proportion of double flowers will vary according to the degree of excellence of strain possessed by the seeds.

Montbretias.—These lovely bulbous plants should be afforded a position under a south wall, or near to a warm glasshouse; but in the southern counties they will flourish in any part of the garden exposed to full sunshine. They require a fairly rich, open soil, and should be given water in early summer if the weather is very dry. Their long spikes of rich orange-coloured flowers are very attractive. Plant the bulbs five or six inches deep. In some districts it will be necessary to cover the ground in winter with a mulch of short litter or ashes. The successive growth of the corms, as shown in the accompanying figure (fig. 15, p. 25), makes it desirable that they be replanted every two or three years.

Phlox.—Perennial Phloxes may be raised from seeds sown early in this month, as recommended in the case of Dahlias.

Ranunculus.—As early as the weather will permit, Ranunculuses should be planted; the soil should be loamy, and prepared in November by being loosened eighteen inches deep, with the addition of a good dressing of cow-dung. The bed should not be disturbed now, except in levelling. Plant the roots an inch and a half deep, choosing them for their well-

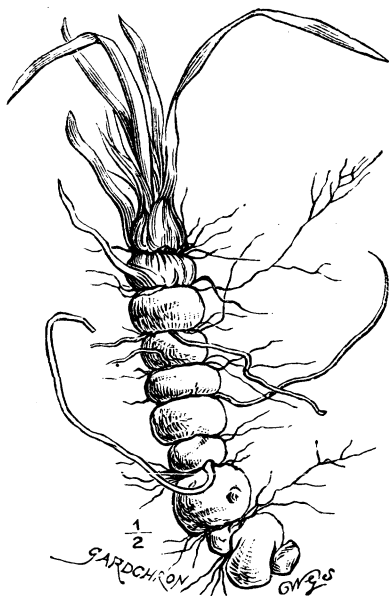


Fig. 15.—Successive Growth of Corms in Montbretia, the youngest at the top.

marked buds in preference to size. Set them in rows six inches apart and four inches apart in the row.

Flower-borders containing hardy bulbs should be dressed and forked over as soon as the bulbs come above ground; if done before there is danger of hurting them.

Old stools of perennial Phlox, Sunflowers, Asters (Michaelmas Daisies), &c., may be divided and replanted, with as little delay as possible.

GREENHOUSE.

Those possessing a greenhouse may be reminded that the bulbs of Begonias, Gloxinias, and other tubers cultivated under glass, unless already started into growth, should now be induced to do so. Seeds may

be sown of Balsams, Petunias, Celosias, and many other tender species. Take cuttings of Begonia Gloire de Lorraine, one of the most effective winter flowering plants.

APRIL.

It often happens, for want of opportunity or from unfavourable weather, that much of the work recommended to be done last month remains undone at the beginning of this; but if so it must no longer be delayed. This is a month of shower and sunshine, the one soon driving the other away, and growth makes rapid progress; therefore every moment should be profitably employed. Weeds, especially if neglected, will speedily flower and shed their seeds, yielding a numerous offspring. They must, therefore, be destroyed by hoeing before they come into flower. Never let the hoe, during fine weather, remain idle, as its use will not only destroy weeds, but encourage the growth of the crops by keeping the surface of the ground in a loose condition, allowing the air and the sun's rays to penetrate it. Insects, like weeds, may be made comparatively scarce by sticking to the work of destroying them the moment they are seen; for, like them, if neglected, they multiply beyond belief. Aphis (flies), green and black, may be killed by dressing with quassia water, two ounces to one gallon of water, the chips being put in a bag and boiled. Cayenne pepper and tobacco-powder are also of use, and clean water forcibly syringed on the bushes is good. All planting in the kitchen-garden in spring and summer should be done in drills, because the plants may be more readily watered; and the first hoeing, by filling in the drills, acts also as an earthing-up. Some frosty nights usually occur, the effects of which on fruit-blossoms, young seedlings, and early growths of even hardy plants must be carefully guarded against; a slight frost may do more mischief now than a severe one in winter, when the plants are at rest.

VEGETABLES.

Artichokes (Globe).—Suckers may now be planted in ground that has been prepared for them. The rows may be from four to five feet apart, and the suckers may be planted at distances of not less than two feet.

Asparagus.—If new beds are necessary, roots may be planted during the present month. A deep, rich, sandy loam is the best for this crop, and if the ground be well prepared, and strong roots are planted properly, the beds will be good for seven or even ten years.

Beans.—When the last-sown of the Broad Beans show their first perfect leaves, to insure a regular succession some more should be sown in an open situation; let the rows range north and south if possible, and do not sow all together in a plot, but in separate rows, and crop between—the produce will be nearly double; and the space between the rows may be planted with Kale, Brussels Sprouts, Colewort, or other greens in July or August.

Beans (French).—Sow a few dwarf Beans of the variety Ne Plus Ultra after the middle of this month, but defer the sowing of Runner Beans until the end of the month or beginning of May.

Beet.—In the first or second week some Red Beet may be sown, upon ground prepared as advised for Carrots (at p. 14), in shallow drills fifteen inches apart; three or four seeds should be dropped together in the drills at intervals of about eight inches. When the plants have acquired three or four leaves, these patches must be thinned to one plant, retaining that which is strongest and of the darkest colour. Little more care is necessary in their culture, except keeping them free from weeds and loosening the surface soil about them now and then, until they are ready for storing in October or November. In lifting them great care must be taken not to injure the roots, or to cut off the leaves too closely. When dry, store them away like Carrots in dry soil or sand; or bury them with their heads just under the soil, close together, in trenches, and cover with litter in hard weather. In preparing the root for boiling it must not be trimmed, as when cut it loses much of its fine colour in the process of boiling, therefore washing perfectly clean is all it requires before cooking; and it should not be pricked with a fork to ascertain if it is sufficiently boiled, as by so doing the colour would be spoiled. The Turnip-rooted Beetroot is earlier than the tapering ones. Dell's Crimson and Cheltenham Green-top are good varieties of the latter.

Borecole, or Curled Greens.—This valuable and hardy vegetable should be sown about the second week, if two sowings are made; but, generally speaking, for small gardens, one will be found enough. If the smallest plants are pricked out to strengthen in some open spot about three inches apart, they will make stout plants, and by being planted out later will form a succession. The sowing may be made in any vacant part of the garden; but if the seeds are sown rather thinly in an open situation they will come stronger. The best varieties are Improved Curled, "Asparagus," which yields a quantity of sprouts in the spring, "Cottager," Veitch's New Sprouting, and Labrador, or Ragged Jack; the last continues in use very late, and is very hardy.

Brussels Sprouts.—No kind of green vegetable deserves more wide cultivation than Brussels Sprouts, as they are very hardy and productive, and when cooked delicate and wholesome. More seeds may be sown this month, in the same manner as Borecole. Exhibition and Market Favourite are good varieties.

Cabbage.—The seed-beds of last month must be watered in dry weather. Hoe between or earth up those coming on.

Carrots.—If the main crop was not sown last month, let the work be done early in April.

Celery.—The main crop should now be sown in a warm place and light soil; the seed, being small, should be covered lightly with well-broken earth. Do not sow it very thickly or the plants will rise weakly. The bed should receive some slight protection from heavy rains or cold nights; a hand-glass, or even a garden mat, may be placed over it at night. The varieties advised last month (p. 15) are the best, the white being as hardy as the red. Never cover these seeds with soil, but gently press them down with the hand, a board, or the back of a spade, and keep them well watered with a rose watering-pot.

Cress and Mustard may now be sown under a south wall or fence, and Watercress under a north wall.

Cucumbers.—*Turf Frame.*—To grow this vegetable, and for other purposes which shall be mentioned, we would advise the adoption of

the following plan in some dry sheltered corner of the garden facing the south. To form a pit: Mark out a suitable spot six feet wide, of any required length, and drive down stout stakes at the corners; then get a quantity of grass sods cut into squares about three inches thick, and build with them a back wall two feet three inches high and a front wall fifteen inches; the walls may be a foot or fifteen inches thick, the size of the sods, to keep out frost in winter. The stakes should be driven to the exact height of the walls on the inside, and, when finished, a strip of wood may be nailed along their tops to make a level surface for the lights to rest upon. These must be formed by nailing four light pieces of wood together, the side pieces six feet six inches long and the end ones three feet six inches. These frames should be crossed with twine to support a covering of oiled calico or paper, instead of glass. If turfs cannot readily be got, a number of stakes may be driven down and wattled with rods, or lined inside with slabs, and a wall of earth, as above, built against these. The surface round the pit should be somewhat lower than the interior, to preserve it dry. In this homely pit any kind of Cucumber may be grown during summer. If a plant or two can be got of a size fit to plant out early in May, it will save some trouble; otherwise, about the middle of this month throw into one corner of the pit two or three barrowloads of dung, which will give a little warmth; then sow in a pot half filled with light rich soil the required number of seeds of Veitch's Improved Long Ridge or of the short prickly or Gherkin Cucumber, covering them lightly, and place over the mouth of the pot a piece of flat glass, setting the pot upon the dung. When the plants are throwing up the first rough leaf they may be potted off, two or three in a pot, putting them back on the dung and keeping the lights close for a day or two. As soon as they have made the first rough leaf, "stop" them—that is, pinch off their top just above that leaf, and prepare for planting them out in a few days after by laying some long litter or turfy soil, about three inches thick, as drainage, and a ridge of warm manure about one foot high, treading it down firmly; then along the centre of the pit form a ridge of rich light soil eight inches thick, and plant a pot of plants under each light. The reason for first forming a ridge of soil along the centre is to allow frequent earthings to the plants as their roots appear on the surface, by which means they grow faster than when planted at first in a great body of soil. All that will be wanted after, besides these earthings, is a regular supply of air, taking off the lights for the greater part of the day after the end of May; the stopping and training a certain number of bearing shoots, taking away all that are weak, or seem crowded, and pegging out the rest without confusion. Male flowers and old leaves, when too numerous, must be thinned, and regular supplies of rain or soft water given to the plants. By these means plenty of Cucumbers can be had until late in the season. By some they are considered a delicacy, but it should be remembered that their culture is attended with a great deal of trouble, and that they afford but little nourishment; the pit, however, should be built, as Cucumbers can often be sold to advantage. If warm stable dung be obtainable to make a hot-bed, or there are warmed pits, more tender varieties may be grown, viz., Telegraph, Carter's Champion, Syon House, and Rochford's Market, &c., but the pits must then be made at least one foot six inches higher. Plants for such pits will be

forthcoming from the sowing that was recommended in the calendar for last month.

Lettuce.—A succession of these should always be kept by sowing a few at a time once a month. Sow the same kinds as advised last month, and never neglect watering them whenever dry weather occurs; this rule holds good for all plants used as salading, for if neglected they lose their crispness and flavour. It is a better plan at this date to sow Lettuce seeds where the plants are to stand, and thin them out to one foot apart.

Onions.—If the main crop was not got in last month, it must not be delayed after the beginning of this; and if sown last month, the plants will now be up, and will probably require hand-weeding, and careful hoeing after a shower.

Peas.—Where a succession is required without intervals, a fresh sowing should be made when the last-sown are fairly through the ground. No better kinds than those recommended for last month can be sown. Being robust growers they require stout sticks, which in some places are difficult to obtain; when this is the case, the dwarf kinds, as Maclean's First and Best, American Wonder, Chelsea Gem, and Carter's Daisy may be profitably grown. These grow from fifteen to eighteen inches high, and, therefore, require no stakes, but are very productive, and of good quality.

Potatos.—Refer to what has been said as to the mode of growth of the Potato. The second early crop and the main crop should both be planted in the first fortnight. For small gardens those producing the dwarfest haulm should be chosen for the second crop. Choose small-sized, well-ripened Potatos, and lay them in a warm, dry place until the eyes sprout a little. Dry weather must be chosen for planting, also a dry situation and light soil, in preference to a heavy one. For directions for planting, see calendar for the month of March. Potatos for "seed" should never be kept in a great bulk together, as the fermentation, or "sweating," which they undergo often destroys their growth, and to this we have traced the failure of many crops. They should be placed where they can be often turned, to prevent their early growth and consequent exhaustion. This sweating and early growth ensue when the Potatos are stimulated by exposure to heat, light, and damp; hence, in preserving Potatos it is important to keep them in the dark, as dry as possible, and in some place where the temperature does not vary much, but is never higher than 45 degrees. This is accomplished by pitting the tubers, or by keeping them in cellars or sheds covered with sand or ashes, or even with straw or bracken. Look over the tubers, to see if any are bruised or discoloured, and destroy them, as in all probability they contain the germs of disease. Some of the tubers should be cut open, to see if there are any disease-spots. For late planting observe the same rules, and choose kinds which do not grow very tall or produce many flowers. At page 83 will be found a list of excellent varieties of Potatos, which can be had of any seedsman.

Radishes.—A succession of the Short-top, French Breakfast (which is half white and half red), or Turnip-rooted kinds should now be sown in a moist situation, which should always be chosen for the summer crops of Radishes and other salad plants, as it saves watering, and renders

them crisp and juicy. Radishes sown on a dry soil soon become tough, and hot to the taste.

Savoys.—The savoy should be sown and treated in the same manner as Borecole or Brussels Sprouts. Early Dwarf, Ulm, Dwarf Green Curled, and Tom Thumb are excellent varieties, and being of moderate size, may be planted out closer than the larger growing kinds. The merits of Savoys are well known; their hardiness, ease of culture, and great productiveness are sufficient to recommend them in every family. The Drumhead is a large and good sort for large gardens.

Sea-Kale.—Planted on a north border, which is little used for other crops, it comes into use when vegetables of all kinds are scarce, and is always saleable if grown as a source of profit. It may be raised by sowing seed early in this month, or by slips of the root made in winter and laid in light soil till callused in some cool place free from frost, or small crowns planted in February or early in March. For seeds, draw drills two inches deep, in light, rich soil, and let the seed be dropped about three inches apart in the rows, which should be one foot apart; seedlings are better than root-slips. The first season they will only require to be kept free from weeds, and in the following spring they should be planted out; the ground for them should be well manured, and broken up about eighteen inches deep by being bastard-trenched; plant in patches three together, about six inches apart, in the form of a triangle, and two feet from patch to patch. After some of the seedlings have been planted out in rows to strengthen for one year, they may be placed thickly in large pots or boxes in November, and treated as advised for Rhubarb any time during winter or early in spring. To blanch in the open ground, the buds or crowns must be covered with clean sand about two inches thick, and then have placed over them large pots turned upside down, old boxes or hampers, or any other available thing which will prevent their being broken when they are covered with long dung, fern, or leaves sufficiently thick to keep out frost; or they may be planted one foot apart, and covered with sawdust, old tanners' bark, or sand one foot thick above their crowns, and allowed to grow almost to the top at their natural season; but this is not so good as the other method for blanching it. The covering up with long warm dung should be so arranged that the dung does not come in actual contact with the plant, and is only necessary when it is wished to have it early; otherwise, in its natural season, the keeping out of the light is all that is necessary. The plants will last many years. Sea-Kale plants should be kept to one or two crowns, others being cut away, and they should not be allowed to flower unless seed be required.

Herbs.—Slips of Sage, Thyme, Rue, Hyssop, Lavender, and other herbs, may be planted in a shady place or under a handlight.

Tomatos.—Prick off seedlings, two in a pot of loamy soil, still growing them on in the frame close to the glass; afford the plants air after four days, and shade them in very bright weather. The plants of Lister's Prolific potted last month into 5- or 6-inch pots, may now be put into 8- or 10-inch pots, or be planted out in borders in a warm span-roof house. Grow them on the single-stem principle, stopping all laterals after the first leaf.

Turnips.—Another small sowing of Six-Weeks, Red Globe, Early Strap-leaf, or Yellow Malta may be made, as advised last month.

FRUIT.

Remove foreright or ill-placed shoots from any trained trees. Grafting may still be done early in the month. Clear fruit-trees and bushes from suckers, and keep the ground about them frequently loosened by the hoe. Catch slugs and snails with bran, cabbage leaves strewn about,



Fig. 16.—A Peach shoot disbudded at *a*, *b*, *c*.

or by placing slates and pieces of board on the soil elevated about half an inch ; likewise caterpillars ; or, what is better, destroy the eggs, which may be found in patches on the leaves of cabbage and other plants, which should be squeezed between the thumb and finger. This is a proper season to layer Vines, which is readily done by loosening a proper and healthy shoot, and making a slit half through the shoot under a bud which it is desired should be the bottom of the future plant, for upwards of two or three inches ; then bend it into a pot or in

the ground, fixing it there with a hooked peg, and tying it upright to a stake to prevent its being broken ; it will be well rooted by November, when it may be transplanted. Continue to protect the blossom upon fruit-trees, but do not keep the material over them continuously or it will weaken them. If Apricot trees have set a heavy crop of fruits, remove as many as may be needful. Disbudding should be done gradually, whether upon Apricots or Peach trees. The temperature of the Peach house at night should be 60° to 65° and 10° higher by day.

Vines. (See p. 114.)

FLOWERS.

Annuals.—The main sowing of hardy kinds, as directed in March, should be made this month. The half-hardy kinds may be put in at the end of the month in the same manner as the hardy ones. Make another sowing of Sweet Peas, the flowers are fragrant and useful when cut for decorating the dwelling-room.

Auriculas in pots, when in flower, should be protected from the sun or rain but allowed all the air possible ; they should receive regular supplies of water but never be watered over the leaves. Gold-laced and other varieties of Polyanthuses in pots should be treated in a like manner.

Biennials, as Wallflowers, Brompton, East Lothian and Giant Stocks, Hollyhocks, Campanulas, Sweet Williams, Foxgloves, &c., should be planted out early in the month, if not done in autumn ; and towards the end of the month, seeds of the same kinds may be sown to procure them strong for another season. It may be said that all of these Stocks are best if kept in pots during the winter under some rough kind of protection, they not being quite hardy.

Cuttings of Fuchsias, Heliotropes, Salvias, Verbenas, Petunias, &c., may be planted in pots half filled with soil, and plunged in a warm situation, placing over the pot a flat piece of glass to keep out the air, or the pot may be placed in the window of a dwelling-room if there are no glass-houses or frames. Many plants rather difficult to root may be struck in this way, the sides of the pots acting as a sufficient shade ; the piece of glass should be wiped or occasionally turned during damp weather. The earliest shoots of China and Tea-scented Roses, taken off close to the old wood when about four inches long and treated thus, will make flourishing plants by autumn.

Carnations.—Planting out, or potting in large pots, must not be delayed.

Chrysanthemums.—Plants to be grown on the bush system, as decorative plants, or for providing blooms for decorative purposes, may be stopped whilst in 5-inch pots. (See p. 111.)

Dahlias.—Amateurs who have no glasshouse or warm frame would be unable to follow the directions given in the Calendar last month, but they too will now need to get their Dahlia tubers to start into growth. The tubers may be placed in a box of light soil or decayed leaves, and kept moist, setting them out in the sun during the day and taking them in or protecting them from frost at night by some willows and a covering of ferns. As soon as the shoots are three or four inches long they may all, except one, be broken off close to the old tuber, and struck either as

recommended for other cuttings, or in phials of water, or in damp moss. It is not necessary to strike cuttings if the roots can be divided into as many pieces, each containing an eye, as there are plants required; the buds should be allowed to shoot an inch or two before they are divided. By large growers artificial heat is usually employed to start the Dahlia earlier in the year, but plants started towards the end of this month under a south wall or in a box, as above, will make stronger and shorter-jointed growths, and usually flower the best. The roots of Dahlias may be planted entire, the shoots being thinned out to three or four when they can be grasped by the hand.

Gladiolus.—If the ground has been prepared, some corms of Gladiolus may be planted this month. Put sand and wood ashes under each corm, and let the covering of soil be four inches deep.

Greenhouse.—Fuchsias may need to be potted on, also rooted cuttings, of Bouvardias, Solanum Capsicastrum, young seedling Petunias, &c.

Mignonette should be sown in the open border and in pots or boxes for flowering in the window in July; let the soil be mixed with one-half well-rotted dung and old mortar and pressed down rather firmly, in which the plants will grow strong and become less liable to suffer from the effects of heat and dry weather.

Violas.—Plant out Violas and Pansies that were rooted last autumn, putting them into small beds by themselves, or making them edging for beds of other flowers.

Miscellaneous.—Watch the advancing buds of Roses, and if the leaves appear curled search for the grub which has curled the leaf, or the bloom will be destroyed by it. Window plants should be repotted, and the shoots trained or thinned out if necessary; put sticks to any advancing flower stems. Choice Tulips should be protected from heavy rains and frost; where this cannot be done, shade them from the sun, and water the leaves when frozen early in the day. Clip Box edgings; turn gravel walks, and make the beds or borders smooth and neat with a Dutch-hoe.

MAY.

Functions of Leaves.—Under the head of tillage, an explanation has been given of the methods of cultivation as applied to the root. Whilst by far the greater portion of the watery fluids, including the nitrates and other salts, in a plant is obtained through the root, the solid substances are manufactured in the leaf or in the green parts of plants. This manufacture requires for its execution exposure to sun-light and a certain amount of heat. The air absorbed by the leaf, under the influence of light, meets with the watery and saline matters supplied through the root, and as a consequence chemical action takes place in the leaf, resulting in a variety of subtle and intricate changes, the ultimate result of which is the production of starch, sugar, and other substances necessary for the food of the plant, which are rendered available by the production in the leaf of enzymes or ferments and used up in the formation of new tissues and the growth of the plant. If then tillage operations are necessary for the root, heat, and exposure to the light (much or little according to circumstances) combined with cleanliness, are requisite for the develop-

ment of the leaves and the exercise of their functions. The leaves constitute not only the breathing surface of the plant, but also its digestive apparatus. The importance of cleanliness in plant culture is thus illustrated, for if dirt be allowed to accumulate upon them their powers of work are impaired, and if light be cut off they become blanched and will ultimately die.

Planting, &c.—Towards the middle of this month all kinds of tender plants may be placed or planted out of doors; and for cuttings or seedlings which have been housed, either morning or evening in showery weather is the best time for putting them out. No plant should be planted out until its habit, height, and colour of flower are known, so that the most proper situation may be chosen for it. Half-hardy plants, as Fuchsias, Magnolias, Myrtles, Tea Roses, Hydrangeas, may now have their winter coverings removed. In dry weather water becomes necessary to many plants in the open ground; but it should not be afforded unless positively required, as the benefit arising from artificial watering is only for a time. When, however, it becomes really necessary to do so, water should be given morning and evening, much more abundantly than is usually done, and never left off until a change in the weather renders it unnecessary. A proper care in the choice of objects for watering should be made, preferring seed-beds and crops which can be regularly and thoroughly watered, as Radishes, Lettuces, or newly-set plants. In the case of Strawberries or freshly-planted trees, mulching with straw or grass, to prevent the rapid passage of moisture from the soil, should be adopted. This is a very important month in the warfare against weeds. If the garden be kept clean until the advent of June, the increased sunshine will make subsequent work very effective. Use the Dutch-hoe as frequently as time will allow, between all the crops, uprooting seedling weeds, and leaving a crumb-like surface upon the ground that will be extremely advantageous to the plants, and in which it will be difficult for further seeds of weeds to germinate if there be hot sunshine.

Lawns.—When the grass sown in March or April is two or three inches high it may be topped with a sharp scythe. Avoid cutting it very close with a scythe or machine during the first season.

VEGETABLES.

Hoe between and thin out the Onions where they are too close, and fill up the gaps with some of the thinnings in wet weather. Hoe and thin Carrots, leaving them about six inches apart, and Parsnips nine inches. Strew soot or lime over any seedlings infested with insects. Keep the hoe employed between all advancing crops; any plants intended for seed should have stakes placed to the flower stalks to prevent them from being broken. Never attempt to save seed of two varieties of the same kind of vegetable at one time: as, for instance, Cabbage and Cauliflower, or Broccoli, it being impossible to prevent the flowers from being cross-fertilised by the agency of insects or wind; and instead of producing the true kinds, a race of worthless mules or crosses will be the consequence; therefore, if seed-saving be adopted, which is not to be recommended except in a few instances, save only one of a kind—as, one Lettuce, one Bean, Celery, &c.

Asparagus.—As the shoots become six inches or more long ; they will be ready for gathering. Cut them off just below the surface very carefully, so that no injury is caused to others not yet through the ground.

Beans.—Sow as recommended last month. Should the weather prove dry, the seed may be soaked twenty-four hours before planting, and the open drills watered. Top the early crops as soon as they are in full flower, or when the black fly has made its appearance, which it does always upon the tops. Pinching them off is the best and surest remedy ; draw earth to the stems when about six inches high.

Beans, Kidney, Dwarf and Climbing.—The ground intended for Beans should never be manured at the time of sowing, but if fresh soil has been trenched up in a suitable place sow them on it. Syon House, Long-podded Negro, or Ne Plus Ultra—a very productive variety—may be sown, for the first crop, in the first or second week ; for a succession sow according to the demand, once a month ; the rows should be eighteen inches or two feet apart, and the drills two inches deep. In dry weather water the drills before sowing the seeds, which should be dropped in two inches apart. The new Climbing French Bean is a longer bearer than the Dwarf varieties, and ought to be grown particularly in localities where sticks may be obtained easily. The small-seeded white Haricots are, as ripe seed, excellent articles of food in the winter, being much more nourishing than the Potato.

Beans, Scarlet-Runner.—This fruitful and important crop to the amateur and cottager should also be sown not later than the first week this month. Particular circumstances will always point out the most desirable situation, either in the garden to form an arbour, or to hide something unsightly ; no creeper is more suitable to cover the cottage porch. Scarlet-Runners will grow in nearly any soil ; but, if sown in the open part of the garden, the rows should range north and south. Draw the drills from two to three inches deep, and drop the seeds the same distance or more apart. To ensure good crops, single rows are preferable to sowing them in a plot, even if a good width be left between the rows, which should never be less than five feet. They are sometimes grown without stakes, and kept dwarf by having their tops frequently pinched off ; one important matter is, never to leave pods for seed over the whole piece, but gather clean, and leave enough for seed ungathered in one place, as most plants after they have matured a few seeds cease to be so fruitful as before. Ne Plus Ultra and the Czar are very large-podded varieties, good for exhibition or the table. The Butter Beans, yellow in colour and stringless, are well worth growing for variety's sake ; Princess is also a stringless pod, very tender and delicate.

Beet.—Make a further sowing of Beet, and follow directions given in the Calendar for last month.

Borecole.—If a sufficient number were not raised from the sowing made last month, some more seed should be sown immediately.

Broccoli.—Should the early sown seed have failed another sowing may be made of the later kinds mentioned last month.

Brussels Sprouts.—The same treatment may be given as for Borecole. A few of the earliest plants may possibly be ready for putting out, to afford a few early Sprouts in autumn.

Cabbage.—Sow, about the third or last week, some quick-heading sorts for use during the autumn. These will continue good until severe frost spoils them and renders winter greens tender. Early York,

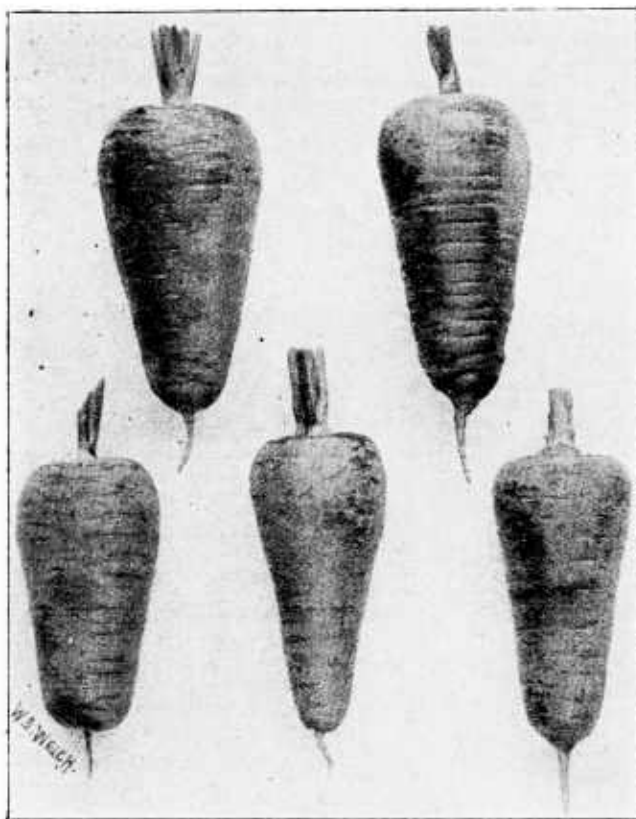


Fig. 17.—A good variety of Early Horn Carrot "Scarlet Model."
(R. Veltch & Son, Exeter.)

Improved Nonpareil, Rosette, and Hardy Green Coleworts; Little Pixie, and Couve Tronchuda or Braganza Cabbage (a most delicious Cabbage, but tender) are the varieties most strongly recommended.

Some of the stoutest plants of the March sowing should now be planted out one foot apart, leaving the smaller plants for succession. Cabbages should have dung given them at planting, unless the land is strong. Tie up the leaves of some of the earliest to assist their hearting.

Carrots.—The Early Nantes and Short Horn may be thinned to about three inches apart; and when they get too close again, every other one may be drawn for immediate use. (See Fig. 17, p. 36.)

Cauliflowers.—In the second or third week, the crop to come into use in October should be sown, and those raised in March should be planted out; choose for them an open spot of deep, well-enriched soil, and supply them freely with water if the weather renders it necessary. They may be watered with manure-water from the cesspool occasionally. In light soil it is a good plan to spread half-rotten rich dung around the plants. Autumn Giant and Walcheren are the varieties to sow.

Celery.—Early this month the first plants will probably be sufficiently advanced to prick out in a warm sheltered situation to strengthen. The best plan is to choose a perfectly hard surface; and upon this spread a layer of rotten dung about three inches thick, beating it tolerably firm with the head of a rake. Upon this spread a thin coating of soil, say half an inch thick, and into this prick the plants three inches apart. The advantages of this method are that the plant's root better in dung than in soil, and are much easier kept moist, which is essential to them; by having a hard surface beneath, they are prevented from forming tap-roots, and rendered less likely to run to seed; on removing them to plant in the trenches they may be cut out with balls of matted fibres, and being then well watered, will scarcely flag at all. Shade them for a few days after they are pricked out, and guard them from slugs.

Chicory (*Cichorium Intybus*).—This is native of Britain, a hardy perennial. The common Chicory, and especially the larger growing variety "Witloof," is used whole as a vegetable, and the leaves when blanched are used for salads. Seeds may be sown in May and June, and subsequently, if a summer supply is desired, in drills one foot apart, thinning the seedlings out to distances of about six inches. In summer the blanching may be done outside as soon as the leaves are large enough for use, by covering them with an inverted pot, &c. The roots obtained from the sowings made in April and May should be taken up in autumn and put into boxes or pots containing soil for forcing. This must be done in a temperature of 55° to 60°, in a place from which light is excluded.

Cucumbers.—The plants intended for the turf pits described in the Calendar for last month may be put out. Amateurs who have heated pits, or a warm span-roof house, should be in a position to cut Cucumbers during the present month.

Mustard and Cress may be sown every week for succession in a moist situation. The seeds do not require covering, but the ground should be made quite level, and watered; then strew the seed thickly on the surface, and press it in with a flat piece of board or the back of the spade.

Leeks.—The young plants will probably be ready by the end of the month, or as soon as they are six inches high, for planting out. A piece of the strongest land which has been deeply dug and well manured should be chosen for them. They may be planted in drills a foot apart,

and about nine inches in the row ; or a large dibber may be used to make a wide hole for each, about four inches deep, into which the plants should be dropped, and fixed by pouring some water from the spout of a watering-pot into the holes ; but do not fill up the holes with soil—that can be done later. Make some puddle, in which the roots must be dipped before planting. If large heads are required, the young plants should be planted in trenches, well manured as for Celery, and earthed up as they advance in growth. Manure water afforded later in the season will induce large growth.

Lettuce.—A succession may again be sown ; let the surface of the ground be freshened up, if it has not been recently dug, and sow thinly upon a piece sufficiently large to hold plants for a fortnight's supply ; and let the thinnings be planted on an adjoining piece of the same size. If the ground is moderately dry, tread the seeds in, and cover them very lightly with soil from the alleys. In light warm soils Lettuces form heads quicker if not transplanted, providing the seed be sown thinly where the plants can stand till of full size, merely thinning out the seedlings to one foot apart. By doing this the tap-root of the plant goes deeply, and drought has less effect on the plants.

Marjoram.—The sweet or knotted kind may now be sown in a warm situation.

Nasturtium (properly called *Tropæolum*).—The climbing varieties are not only useful but ornamental ; the seed should be sown early, where the plants will climb, to hide any unsightly object, or cover an arbour ; the dark flowering kinds produce fruit as plentifully as the light ones, and make a beautiful variety. The young seed-vessels pickled resemble capers in flavour, and are preferred by some persons. If not used, they will find a ready sale. The young points of the side shoots and the flowers may be used with Mustard and Cress. Sow the seeds in drills an inch and a half deep, in any situation. There are many dwarf varieties, which are cultivated for the flower garden—they possess the same virtues ; also a double-flowered variety, worthy a place in the window or flower-border.

Onions.—The surface-soil about them cannot be too often loosened ; and the autumn-sown ones must be planted out during the first moist weather ; choose for them a piece of rich, deeply-dug soil, and in planting take great care not to bury the bulb of the Onion, only putting its roots in the soil, settling it about them by a free watering in the evening, which must be continued until the bulbs have made fresh roots. Plant the Onions in rows eight inches apart and six inches from each other.

Peas.—Sow as before for succession, and earth-up and stick those advancing.

Potatos may still be planted as last month ; but they will be far less productive than those planted earlier, and are more liable to be attacked by disease. Draw or add earth to any rising through the ground, especially to those planted in March, for fear of frost.

Radishes.—Sow as recommended last month.

Savoy.—See **Borecole**, p. 35.

Summer Savory may be sown in the first week ; it is an excellent seasoning for Peas and other similar vegetables. It likes a dry situation, and may remain where sown.

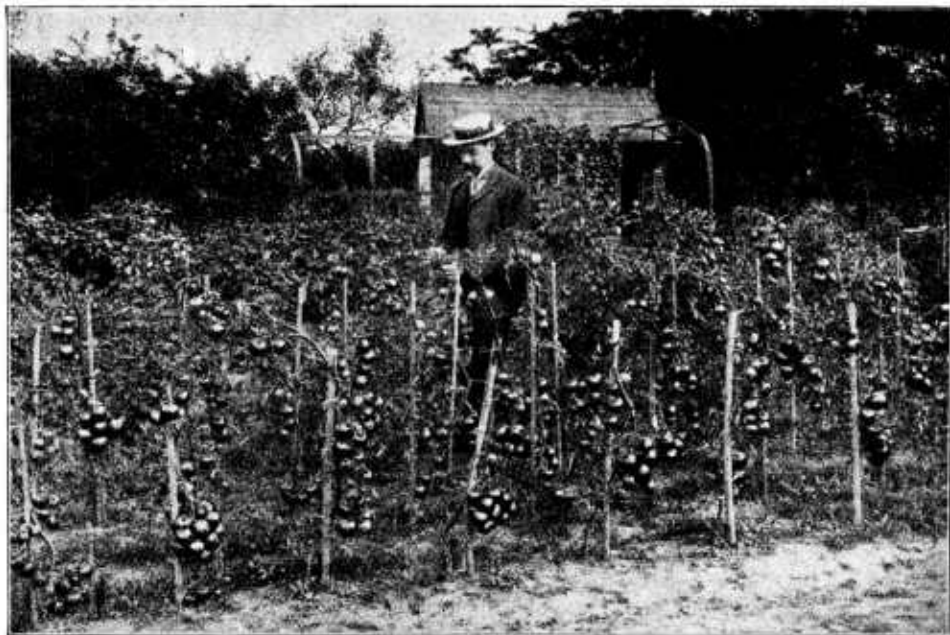


Fig. 18. How Tomatos should be planted In Allotments or Fields where there are no walls.

Spinach may be sown in a shaded situation, but will soon run to seed. The Victoria Improved Round and Giant Viroflay are excellent Spinach for summer or winter use. The Spinach Beet or perennial Spinach is best to sow at this season, as it does not run to seed the same year, and is capital in place of the annual kind; it is also most useful for placing around butter in hot weather.

Tomatos.—Put sticks to the plants intended for cultivation out-of-doors (see Fig. 18, p. 39). If the plants are to be kept in pots during summer shift them now into larger ones, using good but not rich soil, potting firmly, and stand them on a cold frame or in front of a warm wall, with shelter over them at night, or whenever the weather is cold. Those to be planted in the ground out-of-doors need not be repotted.

Turnips.—About the middle of the month a moderate sowing may be made of Six Weeks, or Red American Stone, or Carter's Early Forcing. This sowing will not stand long; if dry weather occur it must be watered. Turnips form a good green manure when grown upon poor soil and dug in, enriching it considerably. If the Turnip-fly be troublesome, pass a piece of board smeared with tar just above the plant. The fly will jump up on seeing this, and the tar will catch them.

Vegetable Marrow.—Seeds of the Long White, Prince Albert, and Custard may be sown early in the month if any means of shelter are at hand; if not, defer sowing until the third week, when the seeds may be planted out where they are intended to remain. They do exceedingly well on a bed of vegetable refuse, soil, &c., and furnish a good supply during the latter part of summer. The male flowers are produced first, especially if the weather be cold. The fruit should be cut for use when five to six inches long. Overgrown fruits exhaust the plants much sooner than when the fruits are cut whilst small.

FRUIT.

Any grafts which appear firmly united, and are growing freely, may have the clay removed from them in wet weather, the old ties removed, and the union newly tied, as the first ties will soon pinch the bark. On removing the clay, if the union is not perfect, a little damp moss may be tied on in its place, and the scion or young shoots secured to a stick stuck in the ground or fastened to the stem or branch. Look over trained trees, and regulate the shoots by removing foreright and ill-placed ones, tying out or otherwise fastening the leading shoots of all branches that are required to fill the space allotted to the trees. Afford water heavily to the roots of trees on walls, especially close to the wall, and mulch afterwards with fern litter or some rather poor manure. Two inches in thickness is enough for a mulch of this kind.

Apricots, which should be more commonly grown, like a southerly aspect and shallow planting, and a very moderate use of the pruning knife; therefore this is the month when pinching back of foreright and other small shoots to form spurs should be done. Pinch back to three or four leaves, and lay in long shoots where there is space so to do without crowding. If the crop is abundant, thin the fruits: these are always saleable. Watch narrowly for insects, and destroy them.

Gooseberry and Currant.—Remove suckers or strong growths from the middle of the bushes, and stop the shoots if large fruit is desired. Look out for the Gooseberry caterpillar, and if it is troublesome spray the trees with a good insecticide, or dust with Hellebore powder (See p. 133.)

Pears.—The finer sure-cropping varieties, as Williams' Bon Chrétien, Louise Bonne of Jersey, Marie Louise, Jargonelle, Brown Beurré, Beurré d'Anjou, &c., if planted against walls in midland and northern counties,



Fig. 19.—An Amateur's system of cultivating Strawberry plants in a Barrel filled with earth which can be turned round so as to expose the plants to the sun uniformly.

and as bushes or cordons in the south, would be a source of profit to amateurs and cottagers, and their treatment is simple.

Raspberries.—Thin out the suckers to four or six of the strongest to each stool.

Strawberries.—When the runners are not required for propagation, cut them off, as they withdraw strength from the plants; water the beds regularly and freely if the weather renders it necessary (see Fig. 19).

Vines (outdoors), towards the end of the month, or as soon as the fruit-bearing shoots can be seen, should have all the weak and ill-placed ones rubbed off.

FLOWERS.

Creepers against walls should never be allowed to become entangled before they are trained. Keep all advancing flower-stems neatly tied; if this is neglected too long, no amount of after care will make them look neat. When the stems of Fuchsias have become a good length, some may be layered by making an incision on the upper side, &c., as recommended for Carnations in July; they will soon root, and make fine plants for flowering late in autumn in pots.

Annuals may be sown for late autumn-flowering.

Auriculas.—Unless seed is wanted, cut down the flower-stems as soon as the bloom is over; they should then be potted, using plenty of drainage, and the following compost:—One-half rich turfy loam, one-fourth well-rotted cow-dung, and one-fourth sharp river sand; these should have been well mixed and frequently turned in winter. If a few half-decayed leaves and a little charcoal are added at the time of potting, they will assist in keeping the soil open. After they are potted, set them on a stage of boards facing the east. Polyanthus when done flowering may be planted out under an east fence or wall.

Chrysanthemums may be potted into the flowering pots during the last week in this month, and the first fortnight in June. (See p. 24.)

Dahlias, about the middle of the month, or as soon after as the plants can be ready, may be planted out. A fresh loamy soil suits them best, when it can be had; but if circumstances render it necessary to plant year after year in the same situation, some of the old soil should be taken away and fresh brought to replace it. The holes for them should be broken up eighteen inches deep; where the soil is light, loam should be added and the crowns of the roots placed so deep as to admit of their being mulched, and then made level with the border with a thin covering of soil, which will not only prevent the unsightly appearance of mulching, but prevent insects harbouring in it, which they otherwise would do. The single-flowered Pompones and Cactus-flowered varieties are worth growing. The second-named are dwarf-growing, the others are tall, and the singles give an immense quantity of bloom when they are not allowed to form seed.

Gladiolus Branchleyensis corms may still be planted about four inches deep in deeply-dug ground, putting a little leaf-mould and sand under and around them.

Greenhouse.—Sow seeds of Cineraria in small, well-drained pans, choosing the free growing, stellate-flowering varieties, rather than those of the ordinary florists' strain. Seeds of the Chinese Primula may also be sown this month. Fill the pots with a compost of leaf-mould and loam, which should be made moderately firm, and then cover with a sprinkling of silver sand. On this sow the seeds, and cover with a thin layer of fine soil.

Hydrangeas.—Thin out the shoots when crowded, leaving only the strongest; some of the points may be put in as cuttings.

Pansies.—Propagate by cuttings in a shady place for autumn flowering; young plants always produce the largest and finest flowers.

Pelargoniums (Zonal), wrongly called Geraniums, which have been

kept in the cellar or in pots, also Ivy-leaved varieties, may now be planted out; also Fuchsias and Marvel of Peru.

Pinks of choice kinds should have their weak flower-stems taken away, leaving only the centre one, and the blooms on each plant should be reduced to four or five to have them fine; water them with manure-water. In tying up the stems, do not tie over a joint, or in growing they are liable to be broken.

Propagate by cuttings Double Wallflowers, Rockets, Double Lychnis, &c., as advised in April.

Stocks.—Sow Giant and Brompton, covering the seeds lightly.

Sweet Peas.—See that proper support is afforded to Sweet Peas.

Wallflowers for early Spring flowering may be sown in the last week.

JUNE.

WATERING out of doors is more or less necessary during this month, for newly-planted vegetables and flowers, and because of drought. After watering the ground round the plant becomes hard upon the surface, and should be loosened with the hoe. Gather herbs for drying just before they are in full flower. Gather them in dry weather and spread them in the shade to dry, for if placed in the sun their colour and fine aroma are destroyed. Remove Cabbage-stalks not required for sprouts, but if no ground for fresh beds can be spared clean off the decayed leaves and hoe or fork between so as to encourage the sprouts, which are generally found useful during the latter part of summer. Continue to remove all decayed remains of crops gathered. Fruit-trees, especially those growing against walls, will need increased attention this month. Borders planted with perennial flowering plants should now afford a good display of bloom, and when they are in flower the opportunity should be taken to examine the labels and renew them if necessary. Privet or Quick hedges should now be neatly cut, and all weeds cleaned out of them; these not only destroy the lower portion of the hedge, but also harbour slugs of several kinds.

VEGETABLES.

Asparagus.—Cutting should cease sufficiently early to allow the plants time to make strong growths, which are necessary to prepare them for producing good shoots in the following season. In the South of England cutting may be discontinued about the middle of the month, but in Scotland a fortnight later. Afford the beds some liquid manure or a sprinkling with a good fertiliser, following this with a dressing of salt.

Broad Beans.—The last crop may now be sown of either Johnson's Wonderful, Seville Longpod, or Green Windsor; if the weather is dry, soak the seeds and water the drills as before. Top any in full bloom, and draw earth to those coming on.

Beans, Kidney.—Make another sowing of a dwarf French variety, and one of Runners, which if the autumn is mild will prove to be very useful. See the directions given in the Calendar for May.

Borecole.—Towards the end of the month some of the stoutest plants will be ready for final transplanting, which should be done, if possible, in moist weather. Draw drills eighteen inches or two feet apart; if eighteen inches apart place the plants the same distance in the rows, or fifteen inches if in drills two feet apart. The roots had better be puddled before planting if the weather is dry and sunny, and as a safeguard if clubbing is feared.

Brussels Sprouts.—Treat precisely as the above. Plant two feet apart each way.

Broccoli.—Some plants of Purple Sprouting and Walcheren will now be ready for planting out in a similar manner to Borecole. A well-prepared plot of strong ground should be chosen in an open situation for all these winter crops; but if there is a scarcity of room some may be planted between the potatoes, and the haulm kept from smothering them. The land for this crop should not have been freshly manured unless very poor; and it should be made firm by treading it, which will tend to the growth being compact and sturdy. Short-stemmed and short thick-leaved plants withstand frost best. If the land be in good heart there is no need to dig it.

Cabbage.—A few more of those kinds sown in March may be planted out, to succeed those planted last month. About the 25th of the month sow a few of any good dwarf-growing kind, Little Pixie or Ellam's Early, for a first crop of Coleworts; these are much neglected in cottage gardens although, as they occupy the ground for so short a time and are equal to young spring Cabbage, from their quick growth no crop can be more profitable. The main sowing should be made next month.

Carrots, if not thinned before, should now be thinned without delay. If the weather be dry water the rows both before and after thinning, hoeing deeply among them soon afterwards.

Celery.—As soon as the earliest plants have become pretty strong, prepare a bed for them as follows:—Take out the earth from a deeply-dug piece of ground where the soil is rich and light about six inches deep and four feet wide, laying it in a ridge along the side of the opening. Then add to the surface of the bed a layer of well-rotted dung, three inches thick; turn this in carefully, bringing about two inches of soil to the top, and plant in rows crosswise fifteen inches apart and six inches plant from plant, reducing the tops slightly. By this method a great number of plants may be raised upon a small piece of ground, and it answers equally well for single rows for early use. In earthing up, two pieces of board are used of the same length as the width of the bed, placing one along each row, and filling between them, lifting the boards out carefully and going on with the next row, always taking care not to add too much soil at a time. Do not allow the plants to lack water at any time nor earth up too soon, as the object of earthing is merely to blanch for use and a fortnight or three weeks will do this. After the plants are earthed they cease to grow fast.

Celeriac will need to have the suckers removed and a very few of the lower leaves, keeping it watered and the land stirred.

Cress and Mustard may be sown every week as before.

Endive.—Sow seeds in drills an inch deep and six inches apart from each other. Choose rich, light soil, and subsequently, when thinning



Fig. 20.—Black Spot of Tomatos (*Cladosporium lycopersici*).

the plants, plant those that are pulled up. Endive is appreciated in autumn.

Leeks.—Plant, if not done before, as recommended last month.

Lettuce.—Towards the end of the month sow for succession as recommended in MAY.

Onions.—Hoe between rows, and hand-weed the rows themselves. Thin the plants again if it is necessary.

Peas.—In the first week the last sowing for the season may be made, for which choose McLean's First and Best, Ne Plus Ultra, or any of the early varieties before named, or Stratagem, as they are better able to withstand the drought than any other kinds. In dry soils, if a narrow trench be taken out and some rotten dung put in it, the Peas being sown above it, they will not be so liable to mildew. These late Peas must be sown thinner than the early kinds. Water them in the rows if dry weather occurs; draw earth to the stems, and put sticks to those coming on.

Potatos.—Earth up after rain, when the surface-soil is tolerably dry; leave the ridges rather wide at the top than otherwise. If it is intended to plant Borecole or Greens in the space between the rows the ground should be carefully forked over before earthing up.

Radishes.—Sow any of the kinds upon a north border or other moist situation.

Tomatos.—In the beginning of the month plant these against the warmest wall or fence, or on a warm border. Some may be planted pots and all. Give no dung. If the plants have set the first truss of fruits so much the better, because, the season for out-of-door Tomatos being so short, everything depends upon an early start being made. Those in a house or warm pit will now afford ripe fruits in quantity. If any of the fruits show signs of attack by the disease represented in the accompanying illustration (Fig. 20, p. 45) remove and burn them at once. The spores of the fungus are supposed to gain entrance to the fruit through minute cracks or punctures in the skin; therefore the use of green stable manure, and of anything likely to induce cracking in the fruits, should be avoided. Over-watering has this effect. As a preventive, ventilate freely, exercise vigilance, and spray the plants at frequent intervals with Potassium Sulphide, prepared as follows: Dissolve one ounce of Potassium Sulphide (Liver of Sulphur) in a quart of hot water; then make up to two and a half gallons with cold water. Feed the plants with manure-water.

Turnips.—A main sowing may now be made. If space be an object, sow Model White Stone; but otherwise Yellow Dutch, Golden Ball, or Early Red American Stone. Chirk Castle Black Stone will be found to keep longer and be more solid; and any roots left in the ground will produce plenty of wholesome greens early in spring. Tread the seed in lightly, and water it when necessary. When the plants come up, sprinkle them with soot or lime.

FRUIT.

Apricot.—Syringe the trees, and look out for the leaf-roller; keep foreright shoots pinched.

Cherry-trees on walls usually become infested with black-fly at this season, which, if not checked, will extend to the fruit. A simple remedy

is, immediately they are seen, to mix some clayey soil with water in such proportions as will form a thin puddle, into which dip the infested points, leaving them to dry in the sun. After the insects have perished, the clay may readily be washed off; but it will do no harm in remaining. The trees may also be syringed two or three times with a mixture made by boiling four ounces of quassia chips in a gallon of soft water ten minutes, and dissolving in it, as it cools, four ounces of soft soap. Roses and many other plants may be cleaned in the same manner.

Gooseberries.—It is good practice to gather a few Gooseberries from each tree whilst green. They make good tarts, and by thus thinning the fruits those that are left to ripen will acquire greater size.

Peaches and Nectarines.—Those in the house or against outside walls should be examined when the “stoning” stage is past, and if the crop is a heavy one thin out the fruits until they are two or three inches from each other.

Pears.—The breastwood may be shortened back to half its length, to be removed entirely in six weeks; or if to be left for forming fruit-spurs it will be left three or four joints long at the second cutting.

Vines trained against the house or walls must now be looked over weekly, and all weak and superfluous shoots removed. The earlier this is attended to the better, and the more likely to forward the ripening of the fruit. Do not allow one spur to support two bunches of Grapes, but remove the smaller or uppermost one, and stop the shoots at an eye above the fruit.

General Work.—Continue to water strawberry-plants if necessary. Keep newly-grafted shoots on fruit-trees securely tied, and the shoots of trained trees fastened in. Fruit-trees that have set heavy crops and are not growing vigorously should be afforded manure-water.

FLOWERS.

Roots of Ranunculus, Hyacinths, Anemones, and Tulips, as soon as the foliage has turned yellow, must be taken up if they are choice kinds, and stored away when dry in paper-bags until the planting season. If suffered to remain in the ground they shoot again in the autumn, which weakens the bulbs, and spoils their blooming at the proper season; and Tulips, when left in the ground, become run in their colours. The soil should be carefully cleansed from them, but none of the skins taken away. Care must be taken in handling Ranunculuses and Anemones not to break their claws.

Small plants of Pelargoniums, Zonal, Ivy-leaf, or sweet-scented Cape species, or Fuchsias intended for the windows in autumn, will make fine specimens for that purpose if potted at once into their winter pots and plunged out of doors, taking care that they have good drainage, and that they do not root through the bottoms or over the tops of the pots.

Annuals.—Some of the quick-flowering kinds may yet be sown, as Nemophila, Virginian Stock, Venus's Looking-glass, Clarkia, Collinsia, Gilia, &c. Some of those thinned out from the border may be potted for flowering in the window, or be placed in a shady place to form a succession. They will want plenty of water. Some of the more tender kinds which were sown in pots and raised in the cucumber-pit may be planted in the

open borders, as French and African Marigolds, Ten-week and East Lothian Stocks, China Asters, Zinnias, and Phlox Drummondii.

Aquilegias.—Seeds may now be sown in the open ground, and the seedlings will be quite strong enough to stand through the winter. There are many very beautiful varieties of the Old Columbine, and they should be favourites in an amateur's garden.

Calceolarias.—Amateurs who have a greenhouse or frames may be reminded that July is the month in which to sow seeds of the herbaceous Calceolaria. Much care is needed by this plant during all its stages of growth.

Carnations should have neat sticks placed to tie the flower-stems to. This should be done loosely, to admit of their growing without breaking. If aphides or green-fly infest the young buds they may be brushed off with a stiff feather, or dusted in the morning, when damp, with snuff or Tobacco Powder. Pale-coloured plants will be much benefited by liquid-manure once or twice a week. Liquid-manure will be found of great advantage to other florists' flowers when putting forth their flower-stems.

Chrysanthemums in the Borders.—The early-flowering varieties, which grow about one to two feet high, and may be struck from cuttings in February, are capital amateurs' and cottagers' plants, giving a great number of blooms that make a good show in lines and clumps. The stems should be thinned out in number according to the strength of the clump—eight to twelve are sufficient. The best sorts are Madame Desgranges, white, and its sports; Lady Fitzwigram, white; White Quintus, Mychett Beauty, Ryecroft Glory, Goacher's Crimson, Harvest Home, Mychett Pink, Edith Syrratt, pink; Eva Williams, and Henry Yvon.

Dahlias.—Keep them neatly and safely tied up, and water them if necessary.

Fuchsias, Verbenas, Heliotropes, Pelargoniums, and similar plants may be readily propagated by cuttings taken now.

Greenhouse.—Plants of Souvenir de la Malmaison and other varieties of Carnations raised from cuttings struck early in the spring may now be shifted into five- or six-inch pots. The plants may stand in an unheated frame during summer; but the "Malmaison" varieties must not be exposed to rain, or the leaves become soft and fall a prey to the fungus disease that so commonly attacks them.

Roses may be budded towards the end of the month. This operation is performed as follows:—Choose a healthy, free-grown shoot, and at a proper place for a bud make a cross cut through the bark as is shown in Fig. 22 at *a*; then from the centre of this, by passing the knife downwards, make the long cut *b*, taking care that the knife does not go deeper than the inner bark. If the stock is in a proper state for budding, the edges of this T-shaped wound may be readily raised. Then from the kind to be budded choose a healthy, full-grown bud, and with a very sharp knife pare it off with a small portion of the wood, in the form of a shield, as at *c*. This, after the wood has been carefully separated from it without hurting the base of the bud, is pushed below the bark by thrusting its lower end at the cross-cut *a*. When it has been pushed down nearly its length, the upper end of the bud must be cut off as shown at *d*, so as to fit the upper side of the cross-cut *a* exactly. The bud is then fixed by tying it closely with bast or worsted, as shown in Fig. 24; and some recommend a

coating of clay and cow-dung to keep out air. Unless the bark rises freely from the stock it is not in a good state for budding. Roses which are not readily raised from cuttings should be layered early in this month. The operation is precisely like to that described for Carnations. See JULY, p. 55.

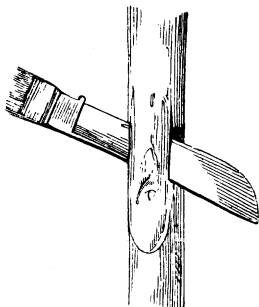


Fig. 21.—Removing the Bud.

Rose Budding.

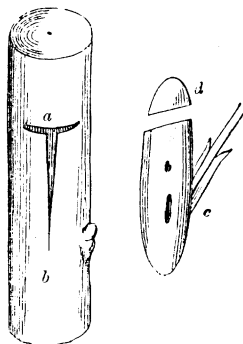


Fig. 22.—Bud and Stock prepared.

a, b, The incision made in the stock.
c, The bud with wood removed.
d, Upper end of bud not wanted.



Fig. 23.—The Bud inserted on the Stock, but not cut off at top.



Fig. 24.—The final act of tying in the Bud.

Perennials and **Biennials** raised from seed may be pricked out at a few inches apart, to strengthen before their final transplantation.

Pinks.—Many kinds of Pinks in opening are liable to burst, either from robust growth, or from a naturally short calyx or cup. To prevent this in flowers which are to be exhibited in competition, a narrow india-rubber band should be slipped round the calyx. Open flowers must be shaded from the sun if it be wished to retain their beauty for any length of time. If there is not an awning, caps of stout paper, painted, and supported above them with a stick, like a miniature umbrella, may be used; or square pieces of thin board, about six inches wide, fixed upon a stick. Border Pinks are beautiful without having so much labour spent on them as the specialist gives to his plants. All growers of Pinks should obtain Mrs. Sinkins, a robust plant with a large pure-white flower. The best time for "piping" is when the plants are in full bloom; if delayed much longer the shoots get hard and do not root readily. They should be taken off when about two inches long, and have the leaves from the two lowermost joints stripped off. Then in a shady part of the garden prepare some light soil by digging it fine; then level, and water it until it becomes a puddle. Whilst in this state plant the pipings, but do not water them after they are planted. To ensure success a handglass should be placed over them; or they may be planted in wide-mouthed pots with a flat piece of glass over, as recommended in April, or they may be placed at the front of the Cucumber-pit. These early pipings make handsomer and stronger plants than later ones, and are therefore much to be preferred.

Violas will need pegging down to the soil, so that they will nicely cover the surface and present an even display of flowers. Remove faded flowers before seed-pods form. In most districts the plants will need watering in this month and in July. In hot southern gardens Violas will be more satisfactory if the plants are damped overhead through a rose watering can early each morning, and again at night during very hot weather.

Wallflowers.—It is not too late to sow seeds of Wallflowers, if none were sown last month.

General Work.—Water freely all plants in pots, newly-planted seedlings, &c., in the evenings. Gather all withered flowers, as it prolongs the flowering season of such plants as Calceolarias, China (monthly) Roses, &c. Destroy weeds. Tie up all flower-stems at an early period, for if allowed to grow straggling no after management will make them look neat. Examine the buds of Roses for grubs. Plants in pots infested with worms may be cleansed of them by watering with lime-water.

JULY.

REMOVE all crops of Peas, Beans, &c., as soon as they cease to be useful. The Pea-haulm may be dried in the sun for bedding a pig or cow, and some lengths of the stout Bean stalks saved may be for earwig traps. Sow the ground where they have grown with soot or quicklime to destroy slugs, and immediately prepare it for winter Greens or Colewort. Preserve ripening seeds from birds by stretching some dark-coloured worsted over them, and gather any that are ripe. Cut herbs when in flower for drying. The main crops of winter Greens should be planted this month.

Clubbing.—Do not plant out any young Cabbage plants that have swollen roots or “club-root.” “Clubbing” or “Finger and Toe” is caused by a slime-fungus (*Plasmodiophora brassicæ*), which attacks many plants of similar affinity to the Cabbage, as Turnips, Radishes, Wallflowers, and such weeds as the Shepherd’s Purse, Charlock, &c. (see Fig. 25). The

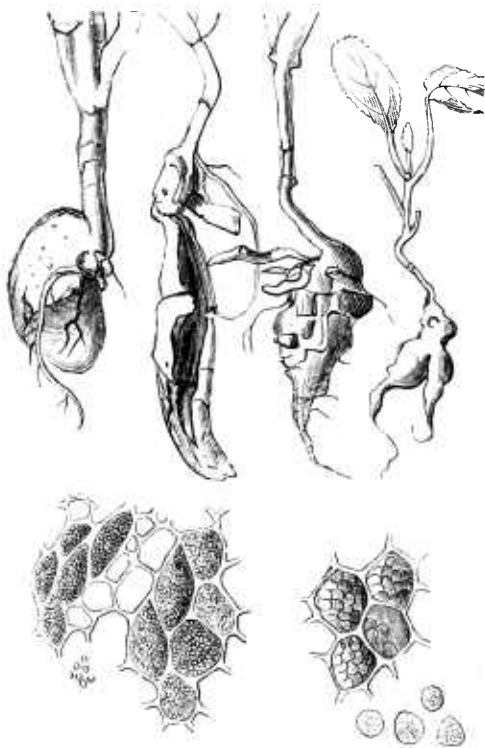


Fig. 25.—Club-root Disease, with Cells from the Diseased Tissues.

disease is contracted in the first instance by spores present in the soil, and these enter the living cells of the roots of Crucifers (Cabbages, &c.). Mr. George Massee recommends the use of quicklime upon diseased soil, and states that thirty-five bushels of lime per acre has been found by Dr. Halsted to be sufficient to arrest the disease. This may be increased to seventy-five bushels per acre if the attack has been severe. Dr. Halsted

has proved that Cabbages are most susceptible to the disease during the first three weeks after germination, consequently it is essential that the soil in the seed-bed should be beyond suspicion of contagion. Do not throw diseased plants upon the manure or rubbish heap, but burn them. Throw away any plants which are blind, that is, when their heart has been destroyed by an insect and grown over by the footstalks; they require examination to find out the faulty ones. Advantage should be taken of rainy weather for planting, otherwise copious waterings will be necessary; dipping the roots in a puddle of thick mud and soot before planting is useful in dry weather.

VEGETABLES.

Borecole.—The main plantation must be made as soon as the plants are fit.

Broccoli.—Plant out the main crops.

Cabbage.—Some of those sown in May should now be planted one foot apart for autumn and early winter use. A few more seeds for Coleworts should be sown as before, about the middle of the month; and in late, cold situations, Imperial, Ellam's Early, Flower of Spring, Enfield Market, or Nonpareil, or any favourite kind not subject to "bolting," may be sown in the last week for the principal spring and summer crop. In early situations next month will be better for this, and in any case two sowings may be made, because it is always uncertain whether those sown early or late will give the better results. This will depend upon the character of the season. An open spot of light soil should be chosen for the seed-bed, and the seed sown broadcast or in shallow drills eight inches apart, and rather thinly; the beds or lines must be kept watered in dry weather, and shaded until the seeds grow.

Cauliflower.—If any were sown in May, they will be ready for transplanting this month. Choose for them a moist situation, and let the ground be rich and well dug; plant them in drills two feet apart, and give them large supplies of water whenever dry weather occurs. Veitch's Autumn Giant is the best of all for planting out in this and the next month, as it stands dry weather better than any other variety, but it requires more space.

Celery.—The main crop should now be planted, if possible in rainy weather, in shallow trenches, fifteen inches wide, into which plenty of well-rotted dung has been dug. Stretch a line along the bottom, and plant a row on each side of the line; the trenches may be about three feet apart, when more than one is required. If it is intended to grow a few plants of an extra size for exhibition they should be planted in separate holes, prepared on purpose for them by breaking up the soil deeply and adding plenty of rich dung; set the plants upon the surface, and supply them regularly and freely with water when necessary. To blanch them, the leaves may be tied together loosely and wound round with straw or hay-bands a little at a time; or four narrow pieces of wood may be nailed together, forming a square tube about one foot long and eight inches square, and slipped over them, filling up the sides with dry sand or gravel. When the first length becomes filled up another may be added. Earthing-up Celery with a great mass of soil prevents its

becoming very large, particularly in dry seasons, as it prevents the roots of the plants from receiving much moisture.

Cucumbers will require the bearing-shoots to be arranged regularly, and all weakly ones and spent leaves or badly-shaped fruit should be removed, and the plants supplied regularly with water.

Kidney-Beans.—The last crop should be sown in the first week; none will be found more profitable than the Early Wonder. Draw a little earth to the stems of those advancing.

Lettuce.—A few more may be sown for succession (see MAY). In dry weather never neglect the watering of Lettuce, both in the seed-bed and afterwards, and stir the soil frequently about them.

Onions.—Potato-Onions may be taken up as soon as the stems have withered. Leave them on the ground, root upwards, for a few days in the sun before they are stored, and preserve enough to replant in December. Large bulbs produce the greatest weight, but small bulbs form the handsomest Onions; these should be used before those sown in spring or autumn.

Parsley.—This is the proper season to sow for early spring and summer use, as if sown now very little, if any, will run to seed next season. Select a good curled variety. If the plants come up too thickly, thin out to five or six inches apart.

Peas.—Earth up and stake as may be required. Put sticks to them immediately after they are high enough to be earthed up.

Potatos.—Draw earth up to their stems in a high ridge. Beat the soil smooth, at least on one side, and lay the tops over on that side, so that if the disease should come the spores of the fungus will fall on the ground between the rows and not descend to the tubers. Pick off the blossoms as soon as they begin to open—children can do this; their removal has been proved to increase the weight of produce as compared with others where blossoms had been left. Many varieties seldom, if ever, produce flowers. Early varieties will be fit to dig up.

Radishes.—A few of the Turnip-rooted kinds may be sown in a shaded place.

Scarlet-Runner Beans will now require staking, which must not be neglected or their growths will become tangled. The stakes may be about six feet or more in height and thrust firmly into the ground, crossing each other one and a half feet from the top. About midway up two smaller rods may be wreathed between them—or if the rods are small at top they may be fixed to each other to form a bower; this will, however, prevent the inner sides of the rows being so productive. Remember what was said in MAY respecting leaving pods for seed.

Spinach.—Sow the Prickly-seeded Spinach to stand through the winter.

Tomatos.—If the plants are not making good growth, apply a thin mulch of dung and water them well when the soil gets very dry—but do not keep it wet. Remove side shoots always, and get the best set of fruit possible on one or two stems. Fasten the plants securely, but not tightly.

Turnips.—Any vacant ground from which early Potatos, Peas, &c., have been removed should be sown with early White Stone or Yellow Malta. These will come to good size, and late in autumn may be stored for winter use.

FRUIT.

Apricots, Apples, Pears, Cherries, Peaches, or Plums may now be budded in the same manner as described for Roses last month (p. 49). Examine grafts and remove any shoots or suckers that may withdraw food from the scion, and keep it secure from injury by winds. Trained Pears, Plums, Apples, or Cherries, should have all the summer growths, except those intended to be trained in, shortened back to two or three eyes, to encourage the formation of fruit-buds.

Currants and Gooseberries should have any of their summer wood that may shade the fruit removed. Gooseberries intended for exhibition must have no rain upon them. Many growers place a saucer of water beneath each fruit, of which only four or five are left upon a young vigorous tree, which is either mulched with well-rotted dung or watered with manure-water whilst the fruit is swelling.

Peaches and Nectarines.—Trees bearing crops of fruits that have “stoned,” and are now swelling, should be afforded manure water, or very slight dressings with a good chemical manure, which may be washed into the soil by a heavy watering after the surface has been loosened with the fork.

Strawberries.—If it is intended to make new plantations layer a sufficient number of the strongest runners for that purpose, and when well-rooted plant them out during showery weather at this season. They will become well established before winter, and usually produce a few fine fruits the following season, which can hardly be the case if planting be delayed until spring.

Vines on outside walls must be regularly looked over, and have all weak, useless shoots removed, as last month. If the smallest berries are thinned out regularly and carefully with a pair of scissors the remaining berries will swell much larger.

FLOWERS.

When double-flowered herbaceous plants are going out of flower they will be usually found in the fittest state for increase by means of cuttings or slips. Clip Box-edgings and also White Thorn and Privet hedges. Laurel and Holly are best cut with the knife. Keep Creepers neatly trained up, and allow no weeds to be seen.

Annuals, during showery weather, may be thinned out, and the thinnings planted.

Bulbs.—Continue to take up as their foliage dies, and supply their places with annuals or other plants.

Carnations.—**LAYERING**: Towards the middle or end of the month is the proper time to layer these, for which purpose choose dry weather, as the shoots are then much less liable to snap off when bending them after the cut is made. The operation is done as follows:—First remove the leaves from the part of the stem to be buried in the soil, and about an inch of the points of the end leaves; then with a sharp knife make a cut a short distance below the most suitable joint to be found (within about two or three of the top), which cut should pass half through the stem and then upwards, nearly to the joint above. Cut the small

portion of stem remaining on the tongue immediately below the joint (see Fig. 26) and bend the shoot down to the soil, which has been loosened to receive it, and fix it there with a small hooked stick, covering it with some finely-sifted light soil an inch deep made tolerably firm about it. After this a watering renders the work complete. All layering is done on the same principle, a layer being "a cutting not separated from the parent plant until it has put out roots for its own support." In layering many kinds of brittle plants it will be found a good plan to make the cut upon the upper side instead of the lower one, for this reason: when the layer is bent down, after the cut is made at the top, the strain is upon the stem, which will stretch a little without breaking;



Fig. 26.—The layering of a Carnation plant.

but when made at the under-side the strain is on the flat-sided wound, which readily snaps. Where the Carnation stems are very numerous it may be worth while to put some in as "pipings," in the same manner as recommended for Pinks, about the 1st of the month; these are much less certain than layers, but they often make healthier and stouter plants when they do strike. A gentle bottom-heat is an advantage to them. The opening flowers must be protected from sun and rain, the calyx tied or secured, and the petals arranged as has been recommended for Pinks. If seedlings were raised last year, they will now be in flower; select only those for layering which have good flowers.

Chrysanthemums in Pots for Producing Large Blooms.—

Attend to watering and do not let a plant suffer check from temporary drought. Secure the growing shoots to stakes, and towards the end of the month let the alternate waterings contain a little soot-water. (See article on p. 110.)

Dahlias.—Thin out weak branches, and keep the plants neatly and safely tied to three or four stakes. Cuttings may now be struck, for preserving in pots during the winter.

Greenhouse.—Most of the flowers will now be out-of-doors, but the greenhouse can be maintained bright with tuberous- and fibrous-rooted Begonias, Fuchsias, Pelargoniums, Celosias, &c. Pelargoniums of the fancy, show and decorative kinds which have flowered may be cut down, and cuttings of the best kinds put in; they will readily root now.

Heartsease or Pansies.—Plant out seedlings, and propagate choice kinds from cuttings put into a shaded situation. Violas should have the seed-vessels cut off.

Hydrangeas may be increased at this season by cuttings, as recommended in MAY, or by layers, making the tongue at the origin of this season's young wood, and shortening the top.

Pinks.—Pipings may still be put in, and the decayed flowers removed.

Roses may still be budded if the bark rises freely. The shoots which have flowered should be cut back to a good bud; a succession of flowers will be thus encouraged. Remove all weak and flowerless shoots, examine the earliest buds, and see that the ties are not pinching the bark.

Stocks.—In leaving single-flowered plants to produce seed, choose those containing the greatest number of petals.

Sweet Peas.—Do not hesitate to cut the flowers from Sweet Peas as often as they are needed. The more that are cut the more will the plants produce; but if the flowers be permitted to remain and produce seeds the resulting strain upon the plants will tend to prevent further growth.

Violas.—Continue the treatment recommended in the Calendar for last month.

AUGUST.

REGULARLY remove decayed flowers of such plants as throw up a succession. In all instances where it is practicable remove the seed-pods from flowering plants if not required, their retention serving to weaken the plant. Sweet Peas, Everlasting Peas (*Lathyrus*), Fuchsias, and many similar plants will be better able to continue to flower if the seed-pods are removed. For the same reason there need be no hesitation in cutting what flowers are requisite for indoor decorations. There is considerable truth in the saying, "Cut flowers, have flowers." The perennial Phloxes, Dahlias, Pentstemons, and many other species in the flower beds and borders will provide an abundance of bloom for weeks to come. The bandages round buds or late grafts will by this time require loosening, and re-tying if they are

not firmly united. Plants intended for late flowering in the greenhouse, conservatory, or window, as Zonal Pelargoniums, Calceolarias, or Fuchsias, should for the present be kept free from flowers; and for the same



Fig. 27.—Gooseberry Langley Beauty from a cross between Railway and Yellow Champagne. See "Select List of Fruits" on p. 83.

purpose a few of the best late annuals, such as Asters, Zinnias, Salpiglossis, and Gaillardia picta, may be potted and placed in a shady situation. Examine bulbs and see that they are not damp, or they will soon become mouldy and injured. Destroy weeds and insects.

Gather herbs in flower for drying, and articles for pickling. Keep the soil about winter crops regularly loosened.

Propagation by Means of Cuttings is effected by taking slips of the young wood upon the plant to be propagated, and placing them in fine soil kept moist but not wet. The soil must be "open"—that is, the particles must be loose enough to admit of the passage of moisture and air, and to allow of the growth of the roots. A certain amount of heat is required, and it is generally advisable to place the cuttings under a bell-glass, or similar contrivance, to prevent too rapid evaporation from the surface of the cutting. Shading, too, is usually required, in order that the delicate growth may not be scorched. When these conditions are fulfilled a thickening at the base of the cutting is soon observed. This is the "callus," which consists of a mass of cells, which are found to contain starch grains and other matters requisite for the nourishment of the cutting. It is evident that these materials must have been derived from the cells in the upper part of the cutting or from the attached leaves, and transferred to the neighbourhood of the wounded surface. Hence the importance of leaving a leaf or two on the cutting. Roots and root-hairs are soon produced, and commence their work of absorption. Vine-eyes are merely cuttings with a large "eye" or bud, which grows in the manner above described. Layering is done in the manner mentioned under Carnations, p. 54.

VEGETABLES.

Artichokes (Globe).—When the heads have been taken, the plants should be cut down.

Borecole, Brussels Sprouts, Savoy, and all other advancing crops of greens will grow much better if the surface of the ground between the rows be frequently loosened by the use of the Dutch hoe. As soon as they become sufficiently advanced some earth may be drawn to their stems; this will not be required so soon where they have been planted in drills, as these become filled up in hoeing between the plants, which answers the same purpose.

Broccoli.—Plant out the last crop of sprouting and other kinds of Broccoli as recommended in June.

Cabbage.—In the first—or, at the latest, the second—week, prepare in an open spot a bed for sowing Cabbage seed for the main spring or early summer supply, selecting the varieties mentioned in the Calendar for July. Sow them rather thinly, as it is important that the plants raised from this sowing should be robust. A few seeds of the Red Dutch may be sown at the same time and in the same manner. The seed-beds must be kept moist, and they would be better if shaded should the weather prove dry and hot. Towards the end of the month some of the first-sown seed for Coleworts will probably be sufficiently strong for transplanting in drills a foot apart. The roots should be dipped in puddle before planting if the ground be dry.

Carrots.—A small patch of Early Horn may be sown on a warm border to stand the winter; they often prove valuable in spring.

Cauliflower.—Those who have built a turf-pit (see p. 27), or possess other means of preserving young plants through the winter, for heading in May and June, when they are valuable, should sow seeds about the

20th to the 25th, upon a warm, open aspect, in rich, well-prepared soil, sowing them thinly, for the same reasons as that mentioned for Cabbage.

Celery.—Earthing-up the earliest Celery must not be neglected ; but it should never be begun until after the roots have been well supplied with moisture, either naturally or artificially, as water does not get to them so readily afterwards, and without water they will neither grow large nor so good ; for this reason late Celery should never be earthed-up too soon, as it not only checks its growth but prevents its keeping through the winter. The outer stems should be well matured before earthing, as the only object in earthing is to blanch the inner leaves, which may be done in three weeks or a month. Do not add much earth at a time, and take care to prevent any of it entering the heart. Some late plants may be planted in double drills about two feet apart ; these will be found very useful for flavouring purposes after the earlier crop has been used or destroyed by frost.

Cucumbers.—Protect them from heavy rains. By closing the lights early in the afternoon mildew will not attack them so readily. Remove from them all diseased fruit and leaves, and stop weakly shoots.

Leeks.—Those intended for earliest use, if they were not planted deeply, should have some earth drawn up to them to protect their stems from the light.

Lettuce.—About the middle of the month sow for standing through the winter. Brown Cos, Black-seeded Bath Cos, and Winter White are the best.

Onions should now have their necks bent down without breaking them : those with thin necks, as soon as they become weak, should be drawn up and turned root upwards in dry weather ; if they are allowed to remain in the ground after this, and wet weather ensues, they will throw out fresh roots and begin to grow again, which impairs their keeping qualities. If the weather be rainy, lay the bulbs on hurdles or boards. About the third week some White Italian or Globe Tripoli should be sown for transplanting in spring, and in the first week some may be sown thick for drawing young.

Parsley of the early sowings may now be cut over close to the ground.

Spinach.—At the latter end of the month the main crop of winter Spinach must be sown ; for this crop the Prickly-seeded winter or Victoria Improved round Spinach are the best. Seed should be sown rather thinly, in drills one foot apart, choosing for the crop a rich, light soil and a dry situation.

Salading may be sown as before.

FRUIT.

Plums.—To protect these or other ripe fruits on walls from flies and wasps, hang some wide-necked bottles among the branches partly-filled with beer-dregs sweetened with treacle. Choice Pears or Apples may be put in muslin bags or nets for the same purpose.

Raspberry canes which have ripened off their fruit should be cut down : by so doing the young canes that will bear a crop next season will have better opportunities to grow strongly and tall. The young growths must be thinned out if they are too numerous.

Strawberries.—New plantations may still be made, and all the runners should be cut off from the old plants. The correct way to plant is indicated in the accompanying illustrations (Fig. 28).

Vines.—Examine regularly, and remove all useless growths, particularly any formed above the fruit, which should be exposed to the sun; the smaller berries may still be thinned out; keep all the branches neatly nailed in. See also p. 114.

FLOWERS.

Annuals should be taken up as soon as their flowers wither, unless seed from them is wanted, when a portion may be allowed to remain.

Bulbs.—Continue to take up any whose leaves are decayed.

Carnations may be layered in the beginning of the month, as directed for July; and as soon as the plants have rooted, which will be in five or six weeks, they should be taken off and potted two or three in a small pot, and placed in a shaded situation to get established before winter, or planted in the border or bed. Pots for Carnations must be well drained, as too great abundance of moisture is more to be feared than frost.

Chrysanthemums.—During August the varieties will show their flower-buds at varying dates. The process described as “taking” a bud consists really in leaving it but removing all the shoots or flower-buds that appear around it (see p. 112).

Dahlias.—Attend to the tying of the shoots, and loosen tight ties. Remove decaying flowers, and trap earwigs by placing a small flower-pot upside down upon the stake with a little hay in the bottom, or put some short lengths of beanstalks amongst the branches and examine them every morning, blowing the insects into a basin of hot water. Flowers meant for exhibition should have some oiled cotton fastened round their stems as a precaution; they must also be sheltered from strong sunshine and heavy rains.

Pansies.—Cuttings of choice varieties for the principal spring bloom should now be planted in a shady situation—they may for safety receive a slight protection during winter.

Greenhouse.—Any Pelargoniums that were cut down after flowering and have begun to sprout again, may have the soil shaken from their roots, the latter cut back slightly, and be repotted in as small pots as possible, using a loamy soil. This is to allow of their being successively potted in spring, which, if left in their flowering-pots, could not be done; set them in the pit at once, or in a shaded situation, until they make fresh roots.

Pinks.—The pipings should be pricked out into a bed immediately they are rooted, to strengthen before they are finally planted at the end of next month.

Propagate by cuttings from firm shoots such plants as Petunias, Verbenas, Scarlet Pelargoniums, Ageratum, Mesembryanthemums, for next year. Prepare pots filled with light soil and well drained: then plant the cuttings thickly round their sides, and place in a shady situation, or in the turf-pit or house window, where they may remain all the winter.

Stocks.—Biennial kinds, as Giant or Brompton, should now be planted out where they are meant to flower; or, what is safer, they may be potted, so that they may be placed in a pit or under some kind of rough protection in winter.

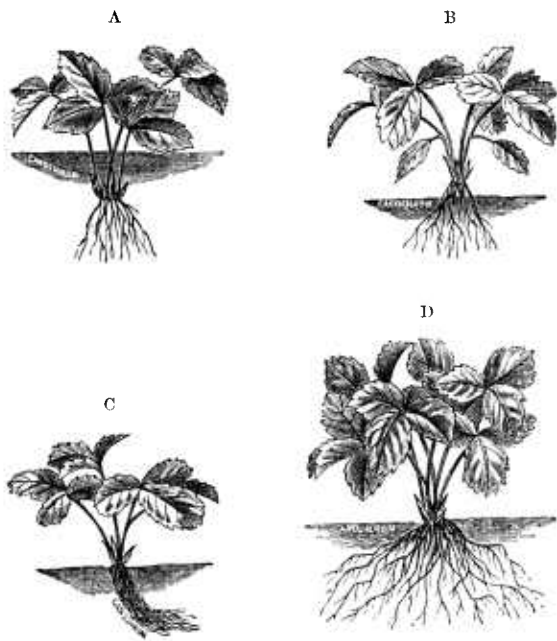


Fig. 28.—Illustrations of good and bad Strawberry planting.

A, planted too deeply; B, insufficiently deep; C, carelessly planted without considering the roots; D, planted as it should be.

SEPTEMBER.

THE shortening days, cooler nights, and waning beauty of the flower-borders demand increased perseverance in keeping the plants that remain in perfection, and all parts of the garden in a neat condition. There is a great deal to do this month. Flower-seeds of various kinds must be collected and dried, keeping each in a separate paper, with its name, height, and colour, or any other observations marked upon it. Any choice half-hardy plants which have been growing in the open border during

the summer should now be potted for the greenhouse or window, or be placed under protection. In the absence of better means of keeping scarlet or other Pelargoniums, they may be lifted with the soil adhering to their roots and hung up in a cellar. Beds for choice bulbs should now be prepared, the soil being broken up eighteen inches deep, but no manure should be added so near their surface as to touch the bulbs. Pinks also should be planted in their flowering beds, as they never do so well when disturbed in the spring. Dahlias which have not been mulched, and whose crowns are near the surface, should have a layer of sawdust spread over them, as much to keep them dry as to preserve them from injury by frost.

Lawns.—Grass-seeds may be sown as soon as possible for the making of new lawns, if the work was not done in the spring, or in the last fortnight in August. The necessary work will be similar to that briefly described on p. 10.

VEGETABLES.

Two hoeings while weeds are small will more thoroughly get rid of them, and be found far better for the crops, than a deferred hoeing, which will require the weeds to be raked off. Any spot well cleaned now will remain so, but the hoe should be employed between the growing winter crops, whether there are weeds or not. Thin out the winter Spinach to about six inches apart, and Turnips to double that distance. Continue to gather articles for pickling, and remove all spent crops.

Cabbage.—Continue to plant out for Coleworts until sufficient ground is occupied, reserving plenty of space for the August-sown plants. As soon as these are sufficiently advanced they should be pricked out about three inches apart; it is important to do this, as it checks their growth and renders them stouter and hardier.

Cauliflower.—Some of the August-sown plants, when they have made two perfect leaves, should be pricked out in a very sheltered place; they may live if a mild winter ensue, particularly if some Fern be spread over them during frost. Some others may either be pricked out in pots or in a box, and placed in the turf-pit; or a portion of one light may be prepared for them, that is, by levelling and making firm the Cucumber-soil, and planting them in it at three inches apart.

Celery.—Earth up when the weather allows.

Lettuce may be planted out to stand the winter under fences or in other sheltered situations, using the varieties before mentioned as best for standing the winter.

Onions will be ready to draw if this work has not been done. In storing, any with thick necks should be picked out from the others and used first; never peel off any of the coatings, or bruise them. As soon as they are perfectly dry they should be tied up in ropes or bunches, and hung up in a dry, airy place.

Potatos.—Take up as soon as ripe, that is, when the haulm or tops are decayed, and let the tubers lie on the ground for a few hours till dry. Do not allow diseased haulm to lie about, but burn it as soon as possible. By no means give to the pigs or fowls diseased tubers unless they have been previously boiled. The best way of preserving the tubers is to keep

them dry and exclude frost; if a dry, cool cellar be possessed, nothing more will be required. If pitted out of doors choose a dry situation, and when the Potatos are dry, lay them in a narrow ridge, then cover them with straw, and upon this place a layer of soil, taken from the edge of the ridge, which will drain the water from the surface where the tubers are laid. If pitted in any considerable quantity, place two or three draining pipes, three to four inches in diameter, upright in the top of the ridge so that superabundant moisture from the Potatos may escape—a flat tile placed on the top will exclude rain or vermin.

Spinach.—The winter crop may be sown in the first week, if this sowing has been delayed. (See Calendar for last month, p. 59.)

Tomatos.—Thin the fruits if too abundant, cut off portions of the leaves that shade them, stop the leader and remove side-shoots. Manure-water will help the plants if the crop be a heavy one. These remarks will apply equally to plants cultivated in a house, in a frame, or in the open.

FRUIT.

Apples or Pears.—Gather, during dry weather, any kinds which may ripen this month. To find out whether they are ready for gathering, raise them gently, and if they part readily from the tree, or if on cutting one through the middle the seeds are seen to be becoming brown, they may be taken. Early fruit had better be gathered a little before they are quite ripe than after. Fruit-tree planting should be commenced next month, and if the ground is vacant it may be prepared for the purpose now.

Strawberry runners may yet be planted.

Vines.—Examine as recommended last month.

FLOWERS.

Annuals.—Various hardy kinds if sown now will stand an ordinary winter without protection. A poor soil in a sheltered situation should be chosen for them. The following are some of the best:—Clarkias, two sorts, pink and white; Collinsias, lilac and white; Godetia, several beautiful varieties; Enothera bistorta Veitchiana, yellow; Nemophilas, two kinds, beautiful blue and white; Gilias, blue and various-coloured; Leptosiphons, Silene pendula, Saponaria calabrica, Myosotis alpina and M. dissitiflora.

Auriculas.—Towards the end of the month, sooner or later according to the state of the weather, those in pots must be placed in their winter quarters, but they must receive all the air and light possible, only protecting them from heavy rains and frost. The turf-pit will be found the best place for them.

Cactus.—Early in the month any which have stood out after flowering must be taken in and receive but little water through the winter.

Chrysanthemums.—Keep their shoots neatly tied, and do not allow them to suffer for want of nor from an excessive use of water.

Roses.—Cuttings either of Tea-scented, Chinese, Bourbon, or hybrid perpetuals may now be taken off and planted thickly in drills about one foot apart, using a little light sandy soil to insert the cuttings in. By

the following autumn they will have formed plants, and may be planted out in the borders or other suitable situation. Many varieties of hybrid perpetual and Tea Roses do better on their own roots than they do when budded on Briars or stocks of any kind.

Calceolarias.—Offsets of the herbaceous kinds may now be taken off and potted in small pots, using turfy loam for them.

Carnations.—See last month (p. 60).

Dahlias will require constant attention, trapping earwigs, searching for caterpillars, and removing faded flowers. After the seeds are ripe they should be taken out directly, or they are apt to rot if left in the flower.

Edgings of Box, Thrift, and Saxifrage may be re-made or repaired; beat the edging of soil they are to be planted against very firm with the back of the spade, or they are apt to be loosened by frosts, which causes many plants to die.

Pinks.—If a bed is to be prepared expressly to grow these as show-flowers it should be done now. The soil should be good loam, about a foot and a half deep, enriched with a coating of well-rotted cow-dung and lime-rubbish six inches thick; the bed should be raised about six inches above the surrounding surface. Choose plants which possess an upright strong leader and a few side-shoots in preference to larger plants having numerous leaders; to obtain fine flowers, only one leader to a plant must be allowed to remain for flowering. Set them about nine inches apart; the remaining plants may be put in the flower borders.

Propagate by cuttings early in the month, as recommended for August. Cuttings of Violas and bedding Calceolarias may be put in on prepared soil under handlights, at the foot of a wall with north aspect. The soil should be of a sandy nature, and have a surface layer of sand half an inch deep.

Snowdrops, Crocuses, Persian Iris, Dog's-tooth Violets, Glory of the Snow, Scillas, Crown Imperials, and Narcissus—any that are out of the ground must be planted without delay; they may be set from two to three inches deep, according to the size and strength of the bulbs. In many kinds, as Crocus, the new bulbs are formed every year above the old one, which brings them every year nearer the surface, and renders their replanting necessary every three or four years.

Seeds.—Gather any desirable kinds immediately they are ripe, or in the case of some kinds the most perfect seeds will be lost.

OCTOBER.

THE principal work of this month consists in storing Apples and Pears, and various vegetable roots, in planting bulbs, and sheltering tender plants. The best way of telling the proper time to gather late fruit is by remarking the ease with which they leave the tree (see p. 63). In gathering, keep each kind separately, and handle them with the greatest care, as upon this their keeping very much depends. Codlins, and other kitchen sorts of Apples likely to shrivel, had better be laid carefully in small heaps and

covered with straw ; they will thus keep longer and plumper, retaining their weight. The best place to keep Apples or Pears in is a dry room, a cellar, or any other place not affected by the weather ; but for the more valuable late-keeping Apples or Pears, the following plan cannot be too strongly recommended :—Get some fine pit-sand and make it hot, to dry it and destroy any vegetable remains it may contain ; then procure some large jars or flower-pots, put a little sand, when cool, in the bottom, and then a layer of fruit, which should barely touch each other, filling up between them with the sand until the vessels are full, when they may be placed in the bottom of a cupboard, or any other place where they will be safe from frost and keep dry. The best and most perfect fruit should be chosen for this purpose, which may be ascertained after they have been gathered a short time. Any choice or late-keeping kind meant for exhibition should be preserved in this manner. There is no need to place straw or fern under the fruit, but it should lay on shelves made of thin unpainted battens, and be kept clean by scrubbing with strong soapy water once a year.

The weather during October is frequently very changeable, and the temperature declines rapidly as the daylight becomes less. It will be essential to take means for preventing frost affecting the inmates of the conservatory, greenhouse, or pits and frames, and to be watchful that no tender plants out of doors it is wished to preserve during winter are left unprotected. Keep fallen leaves collected, and maintain the garden as clean and tidy as the season will permit.

Spring Bedding.—The term “Spring Bedding” is used to describe the practice of planting flower-beds with bulbs and plants that bloom in early spring, and may in most cases be removed at some time about the end of the month of May to make room for other plants that will be effective during summer.

Among spring bedding plants are included Hyacinths, Tulips, Narcissus, Anemones, Ranunculus, *Scilla sibirica*, Crocuses, Snowdrops, Chionodoxas, and such like bulbs, most of which should be planted as soon after the commencement of October as circumstances and the state of the ground will permit. Ranunculus and Anemones may also be planted in February, and they sometimes succeed better than those planted in autumn. Among other plants that are suited for the purpose are *Alyssum saxatile*, *Arabis albida*, *Aubrietia deltoidea*, Auriculas, Double-flowered Daisies, *Doronicums*, the Forget-me-not (*Myosotis alpestris*), the Dwarf Phloxes, *Polyanthus*, Primrose, Saxifragas, Violas, Wallflowers, &c. The propagation and cultivation of these plants in the reserve garden is a simple matter, and may be done in most cases by division of the roots. If a little consideration be given to the selection of species for association with each other, such delightful effects may be obtained as will be unsurpassed throughout the year.

Winter Bedding consists in planting the flower-beds in the most conspicuous parts of the garden with small plants of hardy evergreen trees and shrubs, species of Conifers being amongst those useful for this purpose, also Aucubas, Hollies, Ivies, *Pernettyas*, &c. They serve to cover the ground during winter, and may, if desirable, be associated with some of the species mentioned in connection with “spring bedding.” It will be necessary to remove these plants to the reserve garden in spring.

VEGETABLES.

Cabbage.—Towards the end of the month some of the stoutest August-sown plants may be planted at one and a-half foot apart in rich soil made firm by trampling. Others may be planted in rows one foot apart; and before they become large enough to crowd each other in spring each alternate one may be drawn for use, leaving the others for cabbaging. The remainder should be pricked out, three inches apart, on a sheltered border, either to plant in the spring or to use to fill up gaps.

Cauliflower.—Watch for slugs on those last sown, or they will soon destroy many plants. If the slugs are at all troublesome, occasionally dust the plants with a little quicklime or dry soot.

Celery.—Earth up during fine dry weather, and ridge or dig any ground as soon as vacant, preparing it in the best manner for the next crop, unless the land is very light and porous, in which case manure added now would in a great measure disappear before the spring.

Lettuce.—The August-sown will now be fit for transplanting under the shelter of a hedge, at the foot of a wall or fence, or in any place where they will be partially protected, and have a light dry soil.

Onions.—Keep seed-beds free from weeds.

Parsnips and **Carrots** should be taken up when their tops have turned yellow, and the roots must not be hurt in lifting. The better way is to open a wide trench on one side of the piece and trench them out. Some of the Parsnips should be left in the ground, covering them before hard frosts with a little litter.

Potatos.—Continue to take up in fine weather; tubers meant for seed should be kept in thin layers apart from the others.

Spinach.—Hand-weed and loosen the surface soil about the plants.

Tomatos.—Fruits should be gathered as fast as they colour somewhat and be put in a light warm house or window to ripen.

FRUIT.

Gooseberry and **Currant.**—Begin pruning bushes; towards the end of the month they may also be transplanted. They should have some well-rotted manure dug in about them every second or third year; and if the Gooseberry sawfly or caterpillar is troublesome, the soil should be removed from under the bushes for a depth of two inches, replacing it with fresh material. In pruning Gooseberries those meant to produce large fruit for exhibition should have their young shoots thinned out well and shortened back about half their length; but others meant to produce heavier crops should have the leading shoots left their whole length, only thinning out the middle of the bush, and taking away any branches that cross each other. From the bad methods of pruning pursued, few private growers produce such fine Currants as market-gardeners do. After the head of the bush is formed, allow several main branches to rise at regular distances of six or eight inches from each other, prune the laterals or side branches produced every year back to one or two eyes, leaving the leading shoots six to nine inches long, the end bud of which should point outwards. The spurs, if they become

very long and numerous, should be thinned out. Those of a drooping habit must be cut to a bud on the upper side of the branch ; and, indeed, in every kind of pruning the direction of the topmost eye is of great importance. Currants can scarcely be pruned too closely. As soon as the prunings are collected, burn them, and spread the ashes beneath the bushes. The branches of Black Currant bushes may be thinned out, but not shortened. Lay in by the heels some of the strongest shoots if required for cuttings.

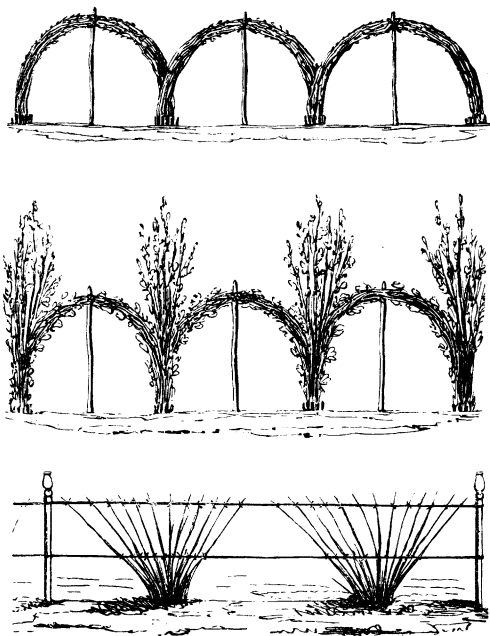


Fig. 29.—Methods of training Raspberry Canes.

Raspberry Canes may be planted towards the end of the month. Select moderately strong canes, well furnished with roots, and provide them with a rich, rather retentive soil. The illustration fig. 29 shows various methods of training the canes. Apple and Pear trees may be planted as soon as the nurserymen can supply well-rooted trees.

Strawberry.—Top-dress beds with well-rotted dung, unless the ground be very heavy or naturally wet.

FLOWERS.

All plants which require protection should be placed in the house or turf-pit this month. The pots should stand on a layer of coal-ashes, and if they are plunged the roots will be less hurt by frost; worms will not get in, and water will be seldom necessary; whether this be done or not, water must be afforded very sparingly, and always on fine mornings, bearing in mind that many plants are more easily hurt by damp than by frost. Remove dead leaves from them, and give them all the exposure possible, only keeping out frost, rain, and cold winds. Covers of the same size as those used in summer (which must now be stored away) should be prepared to be thatched with straw for covering the turf-pit, over which a layer of fern or long litter may be spread in severe weather.

Bulbs of any kind meant for flowering in the greenhouse, conservatory, or windows during the early spring months should now be potted. Let the soil be dry, and place the bulbs just deep enough in the pots to admit of the bulb itself, not the neck, being covered. They should be placed in the pit, or plunged in a warm, dry situation, and covered six inches deep with sawdust, fine coal ashes, or sand. Any beds intended for Tulips, Hyacinths, &c., should be prepared. The beds should be eighteen inches deep and well drained. Plant the bulbs in fair weather, when the soil is moderately dry, if possible.

Chrysanthemums trained against walls should be neatly spread out; those for flowering in the window must have plenty of water, and manure-water or slight surface dressings of Clay's Fertiliser till colour is seen in the buds, when no more manure may be afforded.

Greenhouse.—Any Chrysanthemums in pots that have not been taken indoors should be removed at once. Cinerarias and Calceolarias require little or no fire heat at this season, but Cyclamens and Primulas do.

Herbaceous Perennials, as Pæonies, Iris, Phlox, Lychnis, and Columbines may now be divided for increase; in replanting them arrange the kinds according to their height, colour, and time of flowering. Flower-borders, where this is attended to, will assume an appearance of regularity, and present a constant succession of flowers throughout this season.

Hollyhocks, Canterbury Bells, Wallflowers, Honesty, and other biennials should be planted now in preference to the spring arranging them as mentioned in the last paragraph.

Lobelias.—In order to prevent the roots of *L. cardinalis* and *fulgens* from rotting during the winter when left out, they may now be divided and kept in small pots, or planted thickly in shallow boxes, and protected like Carnations.

Roses.—Any strong-growing varieties may have the longer shoots shortened in, so as to lighten the heads. Vigorous shoots of dwarf plants may also be pegged down to fill up gaps, but the general pruning should be put off until February or early in March, so that the spring growth may have a better chance of escaping injury from frosts. Thrift and other edgings may still be planted. Destroy weeds, and keep the walks and other parts of the garden neat and clean. Protect any choice flowers, as Carnations and Pansies, from heavy rains.

NOVEMBER.

Tillage; its Beneficial Action.—Everyone recognises the necessity for drainage under certain conditions, as also for ploughing, digging, hoeing, and other methods of cultivating the soil, but not everyone troubles himself to know why these operations are beneficial. A few words may therefore be added by way of explanation. First of all, it must be remembered that the roots of growing plants are alive; they feed, they breathe, they grow; they require therefore food, water, heat, and air. They are sensitive to impressions—too much heat or too little will kill them. Some substances will nourish them, others will destroy them. The tips of the roots are endowed with a power of motion which enables them to push themselves between the particles of the soil, in order to reach the water or the air. The soil, too, is in a sense alive. When fertile it is the home of countless myriads of infinitely minute living creatures called by the general name of *microbes*. Bacteria, which are a particular form of microbes, exist in the soil whenever the conditions are favourable. Extremes of heat, cold, moisture, or drought will kill them, though their spores or reproductive organs are much less susceptible to adverse influences. Some of these bacteria are harmless, some probably harmful, others are beneficial. It is of course these latter with which we are specially concerned. They are beneficial, because, in a way that is not thoroughly understood, they ultimately convert the insoluble and inert nitrogenous substances in the soil into nitrates of lime, potash, or other bases, which, being soluble in water, are absorbed by the roots or root-hairs, and furnish the plant with the nitrogen that is necessary for its development. These facts have been made known by experiment. If the soil is “sterilised,” that is, if the bacteria are killed or denied access, the growth of the crop is impaired or stopped. But if the bacteria be added to previously sterile soil its fertility is at once restored. In the case of Leguminous plants, Peas, Beans, &c., the roots bear little nodules full of bacterial growths by whose agency, it is said, that the nitrogen which forms the most abundant constituent of the air, but which is generally inert, is rendered available for the use of the plant. This fact also has been demonstrated by experiment and furnishes the explanation of the fact that the soil in which Leguminous plants grow is often as rich or richer in nitrogen after the removal of the crop than it was before, in spite of the relatively large proportions of that element found in the plant, and in spite of the fact that no nitrogenous manure may have been added. Now, then, we are in a position to see how it is that the tillage operations above mentioned are beneficial. It is because, by their means, the conditions which are favourable for the growth of the roots, and for the development of the beneficent bacteria are provided. The soil is rendered more porous, water, air (oxygen), and sun-heat, can all be made to permeate the soil, to come in direct relation with its particles. The roots and the minute threads or root-hairs which furnish the chief means by which the plant absorbs watery nutriment from the soil are enabled to penetrate between

the particles of the soil and to suck up the moisture there to be found. In short, the cultural operations just mentioned place both the soil and the plants grown in it in the best possible conditions for fulfilling their mutual relations one to the other.

Preparation of the Ground.—**TRENCHING** : All vacant ground, unless it is very light, should be prepared for future crops ; the only objection to preparing light land is, if dung be added in autumn, its fertilising ingredients filter away in great part before spring with the heavy rains ; but to other soils autumn preparation is of the greatest benefit. For the main crops of Onions, Carrots, and Parsnips, the ground should always be prepared in autumn or winter, and the increase of produce and other advantages that are gained by having the soil broken up two spits deep for most vegetables are very great as compared with ordinary digging. The best plan to do it, and one which we would strongly advise in all small gardens is to “bastard-trench” the ground, which is performed as follows :—Open a trench two feet and a half wide, one full spit and the shovellings deep, and wheel the soil taken out at one end to the spot where it is intended to finish the piece ; then dig the bottom spit in the trench, shovelling in first the dung and then the surface soil of the next trench ; then fill this up with the top spit, &c., of the second (laying the soil in a ridge) and digging the bottom of the second trench as before, and so on until the piece of ground is completed. Some of the advantages of this plan are that it allows the rain to pass more quickly off the surface and the roots to go deeper ; and if weeds have been allowed to get large, by paring the surface into each trench these are buried ; the top spit of fertile soil is also kept uppermost. For all crops it amply repays the little additional labour entailed, and, by reason of the roots going deeper, the crops seldom suffer from drought. Strong soils are able to take up and retain more moisture than light ones, and they remain drier at the surface, and trenching insures a thorough shifting of the earth. The surface of all strong land should be laid up in ridges, or in a very rough, lumpy state, during the winter, the action of frost leaving it when thawed, in a pulverised state, ready immediately after, by levelling in favourable weather, to receive the intended crop.

Pruning.—This is the best month in the year for pruning and transplanting. The pruner must know why he wishes to prune, and then how he can do it best. Practical experience and consideration of the way in which each tree grows naturally will be essential guides. The first thing is to be able to distinguish flower-buds from wood-buds. The leaf-buds are usually pointed, the fruit-buds rounded and in a different situation, according to the particular tree. The pruning of fruit-trees and bushes is often sadly neglected, the plants presenting a thicket of branches, producing in some seasons great numbers of almost worthless fruits, and in other years few, if any ; besides, by their shade permitting nothing to grow beneath them. Those who do not understand how and why to prune will do well to thin out yearly the weak spray wood, to remove one of all the branches that cross each other, and to keep the heads open in the centre. After standard trees have become old, this thinning and regulating is all that is required ; but pruning should be begun in the early stage of a tree's growth, for if it becomes necessary to remove large branches the tree suffers by it ; therefore do not allow any branches to remain in a young tree which it will be

necessary to take away hereafter. In pruning half-standard Apple-trees, cut back until enough shoots are produced to form main branches, which may be trained out to the proper form by placing two hoops of the desired width in the centre of the tree, training the young main branches over on their outside; in the early career of the tree these young, vigorous shoots should not be much pruned back, but only the unripened points removed yearly, always looking at the direction in which the end bud points before a cut is made, as the form of the tree will depend upon



Fig. 30.—Pear Emily d'Heyst on Quince stock, four years old.

this. When your trees have arrived at the height desired, nothing more will be required than to prune the top shoots of the main branches close off every year, or cut back to a strong side-shoot, the side-shoots being cut to one or two buds, by which means plenty of fruit-spurs will soon be formed; and from trees kept thin in this manner the finest fruit is obtained—moreover, they occupy little room.

A fence or wall is a good place for the Pear, if it be at least five feet high; and the shoots may be trained on this at a distance of one-and-a-quarter foot from each other. Training may be done in the form of a fan, or the branches may run horizontally. Pears do not become fruitful if

severely pruned, unless they are worked on the Quince stock. The pruning should therefore be confined to thinning out the young branches in July, leaving little to be done now, shortening only in cases where a supply of young shoots is required. The things on which fruitfulness most depend are their first planting, and root-pruning when necessary after. In planting, the roots must by no means be buried deeply; and in wet situations or retentive clayey soils they should be rather raised by planting on a little mound. The holes should be dug wide—say four



Fig. 31.—Pear Beurré Hardy, on Quince stock.

feet—and deep enough to be partly filled up with stones, brickbats, or some material rammed closely together that will prevent the roots going into the subsoil, and serve as drainage at the same time; two feet will be deep enough. This care will contribute to the health of the trees, bring them to a bearing state at a much earlier age, and improve the quality of the fruit. The strong tap-roots, if any, should be pruned off at the time of planting, and the others laid out carefully.

Root Pruning.—If after this the trees grow too strong, the roots

must be lifted partially or entirely, some of the strongest roots shortened, and all deep-trending roots brought near the surface. Any established unfruitful trees may be treated in the same manner, which will cause them to form fruit buds; and any mulching with dung, or watering when necessary, is sure to have the desired effect, from the certainty

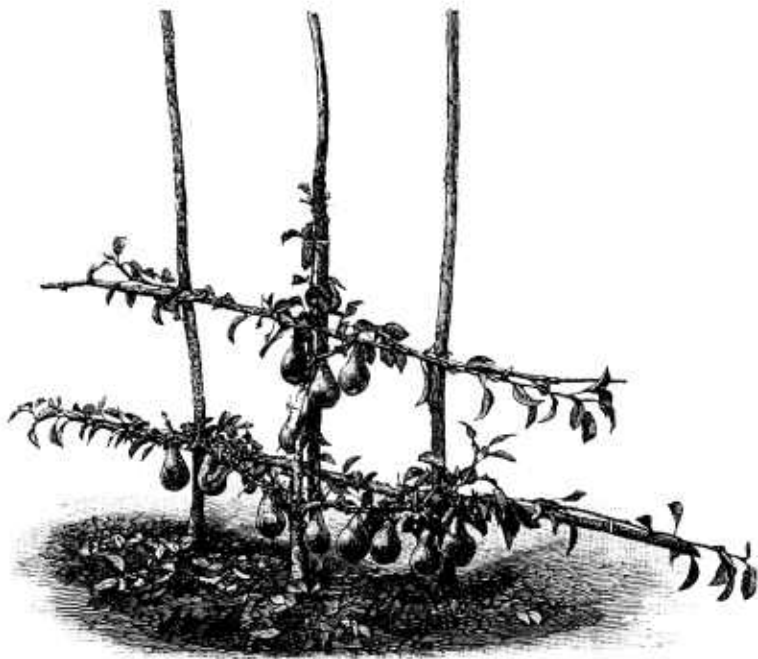


Fig. 32.—Pear Beurré Clairgeau: horizontal espalier on Quince stock, four years old.

of the range of the roots. It cannot be too strongly borne in mind in lifting trees that it is the smallest and finest roots which supply food to the plant—the others serving to anchor the tree to the soil; too much care cannot, therefore, be taken to preserve them from hurt in the removal; and the little additional labour this may cost over removing them carelessly will probably be repaid by a crop of fruit a season earlier; or, at all events, by success in the operation. Unless a tree is crowded with shoots there is no necessity to remove any of the branches; or, at

least, only as many as may seem to balance the loss of roots, which, with care, will be very few. When the trees have begun to grow again they may be regulated by taking out or shortening only the weakest shoots.



Fig. 33.—Pear Beurré Clairgeau (pyramid) on Quince four years old.

VEGETABLES.

Artichokes, Globe.—When these have been cut down to within a foot of the ground level, cover the ground between them with some light protective material, as straw, leaves, &c. Do not cover the hearts of the plants in such a manner as to hinder access of light and air.

Artichokes, Jerusalem.—These tubers may be dug for consumption when required.

Asparagus.—Cut off the growths of Asparagus, and thoroughly clean the beds of all weeds and rubbish.

Beans.—A small sowing of Early Longpod or Mazagan may be made in light earth in a sheltered situation. They should be sown thickly in a small bed, and covered about two inches deep. After they sprout they must be protected in severe weather by fern or litter ; plant in rows the usual width.

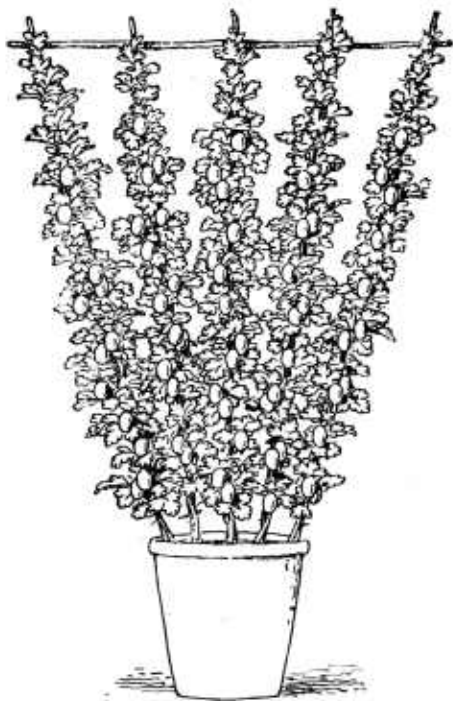


Fig. 34.—Oblique Cordon Gooseberries.

Brussels Sprouts, Savoys and other winter crops should have the dead leaves removed and the ground cleaned.

Cauliflowers, Lettuce, Cabbage, and other young crops should be kept clean and free from slugs.

Peas.—Sow towards the middle of the month **American Wonder** or **Kentish Invicta** under a warm wall and on a warm border. **Sangster's No. 1**, or **William 1st**, sow later in rows eight to ten feet apart. The

spaces between may be planted with Potatos, or sown with Radishes, Lettuce, &c.

Potatos.—In some localities and light soils a few Potatos may be planted on a sheltered border.

Rhubarb and **Sea-Kale** should have the old leaves cleared from them, and the crowns covered with litter, sand, or other protecting material.

FRUIT.

Mulch any newly-planted trees with dung or litter, and if necessary put stakes to them. Prune and nail fruit-trees on walls.

Cherries.—In pruning sweet cherries, all of which fruit on "spurs," shorten the young wood back to within three eyes so of their origin, except where shoots are required to fill up a vacancy. As many young shoots of Morello Cherries may be laid in as can be done without crowding them, as these fruit on the young wood, and fruitless shoots, or those that have borne fruits, should be removed as far as possible. The Morello does well as a bush or low standard.

Gooseberries and **Currants.**—Some of the strongest, straightest, and best-ripened cuttings of Gooseberries and Currants may be planted, previously picking out all the buds quite clean, except three or four at the upper end. These cuttings may be made about a foot long; by picking out the buds from the base the bushes are prevented from throwing up suckers. Neither prune nor transplant during frosty weather; dull, mild weather is best for both purposes.

Vines.—The present is the proper time for planting or pruning the Vine; if a young layer is to be planted the soil should be light and rich, and precautions should be taken, as recommended before, to prevent the roots going deep, beyond the sun's influence; for this and badly-drained soil are the main reasons of grapes so often failing to ripen out of doors in this climate. The bottom of the border should therefore be well drained with broken stones, and about two feet of soil placed above them, well enriched, for the plant to grow in; crushed bones or pounded oyster-shells are lasting manures, and the sandy scrapings from a high road will be found an excellent addition. What is termed "spur-pruning" is the best system for outdoor Grapes; that is, to leave only one or two eyes of the last year's wood on the main branches; and a few short rods, with four or five eyes on each, in situations where it is wished to replace an old shoot, or cut one down at some future time, which should always be considered, as by this means the Vine can be kept furnished with young fruit-bearing branches, even where the space wished covered is considerable. The young wood at the end of the main stems should not be left too long, as some persons are apt to leave them, or the consequence will be that the lower part of the Vine will become weakened, and its regularity destroyed by the upper buds breaking strongly and the lower ones feebly; but try rather to have a regular quantity of young shoots all over the Vine without crowding.

The neatest and best plan for training is to carry the main stem straight along near the ground, into which it may dip and root if the distance that it has to go is considerable; taking up from it, at regular distances, upright main branches.

Vines, Indoor. See p. 114.

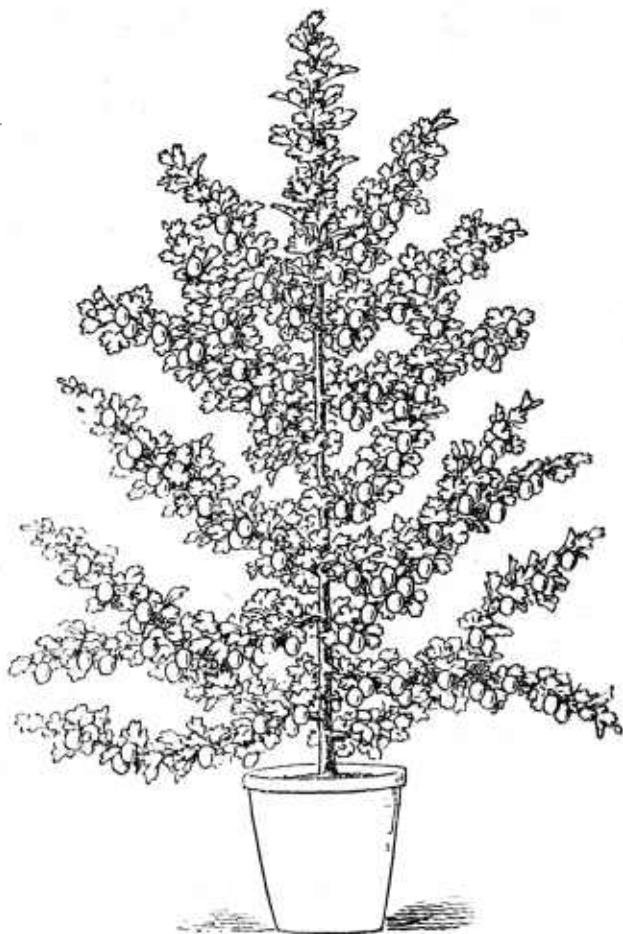


Fig. 35.—Gooseberry bush trained as a pyramid.

FLOWERS.

This is the proper season for procuring and planting any choice flowering shrubs. The following are a few of the most suitable and showy for small gardens: Scarlet-flowering Currants, Quinces, of sorts

beautiful in flower, and whose fruits are valuable ; red *Pyrus japonica*, Persian Lilacs, Mock Orange, or *Philadelphus coronarius* ; China Roses, *Laurustinus*, *Rhododendrons*, Azaleas, Gueldres Rose, Climbing Roses for training, *Kerria japonica*, and *Weigela rosea* ; White and Yellow Broom, Bladder Senna, *Colutea arborescens*—all these may be obtained at little expense.

Greenhouse.—The Conservatory or Greenhouse will be especially gay with winter-flowering Begonias and Chrysanthemums. Chrysanthemums that have been grown to produce large exhibition blooms, and others more or less bushlike, and bearing smaller but more numerous blooms, will unite to make a glorious display, and afford flowers for decorating the dwelling rooms. In many cases the decorative and single-flowered varieties will be appreciated most. Do not overcrowd the plants, and take care to admit a circulation of air when the weather will permit. In order to keep the flowers in good condition as long as possible, the atmosphere should be fairly dry and cool. Begonia Gloire de Lorraine will commence to flower early in this month, and will be amongst the most effective plants, lasting until the end of January.

Keep the plants in the pit or window free from dead leaves or any mouldiness. Give water sparingly, if it be required at all. Window-plants may be placed out during the middle of fine days, and the pit fully exposed. Any choice herbaceous plants, as *Calceolarias*, *Pentstemons*, or Pansies, may still be taken up.

Dahlias and **Cannas**, if still in the ground, should be taken up very carefully on a fine morning, fixing the labels safely to them ; these should either have their merits written upon them, or, what is safer, bear a number referring to a book-note of their heights, colours, &c. Let them dry gradually, and become perfectly so before they are stored away in dry earth or sand in any place which is not damp, and is out of the reach of frost.

Hyacinths should be planted during the first week of the month, if possible ; set them four inches deep and six inches apart. Surround each bulb with a layer of sand ; it acts as drainage, and preserves the coats of the bulb from decay.

Tulips should be planted in the first week if the weather will permit ; they should be set from three to four inches deep and six inches apart, and surrounded with sand in the same manner and for the same reason as recommended for Hyacinths.

Roses.—Stocks of Wild Roses should now be obtained, choosing those with straight stems for budding at any required height next season. The present is a suitable time for planting Roses.

DECEMBER. .

The general operations recommended to be carried out in November apply also to this month, when the weather permits. Trenching, digging and ridging may proceed if the ground be not too wet ; in mild weather transplanting and pruning may be performed, and in frosty weather dung may be got on to the ground. The evenings may be occupied in making

rustic flower vases or stages ; hazel or other rods may be pointed and tied up in bundles to keep them straight for flower-sticks ; shades, labels, hooks for layering, and numerous other little matters of this kind which, if made ready, will save time at a busier season. The store plants in the pits must be kept dry, and have full exposure whenever the weather is fair and not

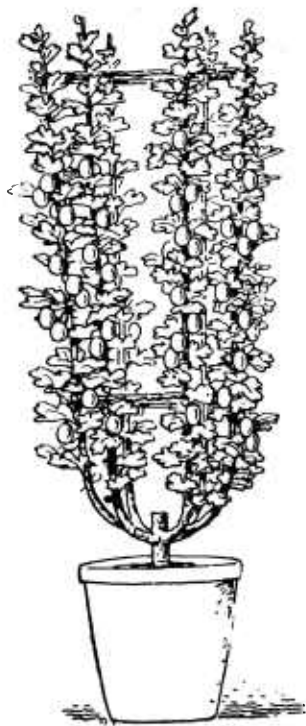


Fig. 36.—Gooseberry bush trained “cup shape.”

frosty. Keep them free from dead leaves or damp litter, and loosen the surface soil in the pots if it becomes hard or green ; take care that all the plants have perfect drainage. If any of the Dahlia tubers appear to be damp, and there is no more suitable place, they should be kept in the dwelling-room for a few days.

VEGETABLES.

Keep all winter crops free from dead leaves, and on frosty mornings wheel manure on to vacant parts of the kitchen garden that are ready to be dug or trenched.

Broccoli.—Early Broccoli will now be plentiful if the weather is fairly open. Look over the plants occasionally, and bend over the leaves in cases where the heads are developing in order to prevent injury by frost.

Chicory.—Put roots of Chicory into a temperature of 55 degs. to 60 degs. for forcing. The crowns should be kept just above the surface of the soil in the boxes or pots. See also note on p. 37, in May.

Onions.—Potato-Onions should be planted in deep drills about one foot apart in a light rich soil any time during the month, when the ground is moderately dry.

FRUIT.

The roots of Vines, Peaches, or Apricots should be mulched with dung if not previously done, intense frost often injuring their roots, to the loss of a crop the next season, besides causing weakly and sickly growth. Continue the pruning of fruit-trees in mild, dry weather.

FLOWERS.

Cut down any faded flowers, and dig or fork over the borders, taking care not to hurt any bulbs. Plants whose hardiness there is any doubt about should have some mulching of light litter or leaves laid round above their roots; if leaves are used, cover them lightly with soil to retain them in position. Hydrangeas, Fuchsias, Salvias, tender Roses, and many other plants, may be preserved in this manner. Protect Hellebores (Christmas Roses) by placing a hand-light over them. The flowers will be whiter and better developed than they would be if left exposed to all weathers.

In the greenhouse there will still be some of the late-flowering Chrysanthemums in bloom, *Primula sinensis* and *Cyclamen* will be in flower or nearly so, according to the means at the amateur's disposal for the cultivation of these excellent winter-flowering greenhouse plants, and *Begonia Gloire de Lorraine* will be at its best; also the hybrids between *B. Socotrana* and the tuberous-rooted varieties, but these plants require the temperature of an intermediate house.

LIST OF SELECT VEGETABLES AND FRUITS.

Artichokes, Jerusalem.

Silver Skinned.

Artichokes, Globe.

Green Globe and Purple Globe.

Beans, Broad.

1. *Early Longpod*, for earliest crops.
2. *Dwarf Fan*.
3. *Early Mazagan*.
4. *Sutton's Green Giant*, abundant bearer, having five Beans in a pod
5. *John Harrison*, very prolific.
6. *Monarch Longpod*.

Beans, Kidney.

1. *Early Wonder*.
2. *Ne Plus Ultra*.
3. *Early White Canterbury*, good for late crops.
4. *Scarlet Runner* and *Ne Plus Ultra*, the seeds should be carefully selected, choosing the darkest marbled ones.
5. *Climbing French, Tender and True*.

Borecole.

- | | | |
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| <ol style="list-style-type: none"> 1. <i>Tall Green or Scotch Kale</i> 2. <i>Dwarf Green</i> 3. <i>Cottager's Kale</i>. 4. <i>Asparagus Kale</i>. 5. <i>Veitch's New Sprouting</i>. | } | <p>Of equal merit, the difference between them being the height they grow and the consequent difference in the space required between them.</p> |
|--|---|---|

Broccoli, early.

1. *Snow's Winter White*, best for winter.
2. *Backhouse's Winter White*.
3. *Purple or White Sprouting*, for cutting in February and March.

Broccoli, late.

- | | | |
|---|---|---|
| <ol style="list-style-type: none"> 1. <i>Snow's Matchless</i> 2. <i>Veitch's Model</i> 3. <i>Frogmore Protecting</i> 4. <i>Sutton's Late Queen</i>. | } | <p>All good and fine kinds, coming into use in the order named.</p> |
|---|---|---|

Brussels Sprouts.

Exhibition, or Market Favourite.

Cabbages.

- | | | |
|---|---|---|
| <ol style="list-style-type: none"> 1. <i>Ellam's Early</i>, or <i>Sutton's Earliest</i> 2. <i>Rosette Colewort</i> 3. <i>Enfield Market</i>, or <i>Nonpareil Improved</i>, sow in autumn for spring and summer use. 4. <i>Cannell's Defiance</i>. 5. <i>Dwarf Green Curled Savoy</i>, one of the best. 6. <i>Drumhead</i>, largest variety grown. 7. <i>Red Dutch</i>, for pickling. | } | <p>Valuable varieties for sowing in spring to produce an autumn supply.</p> |
|---|---|---|

Carrots.

1. *Early Nantes*, for first crop.
 2. *New Red*, intermediate
 3. *Scarlet Model*
- } for main crops.

Cauliflower.

Veitch's Extra Early Forcing, *Early London*, *Walcheren*, and *Veitch's Autumn Giant*.

Celery.

1. *Sandringham Dwarf White*.
2. *Col. Clarke's Red*, a well-known excellent variety, keeps well.
3. *Standard Bearer*, very solid and hardy.
4. *Incomparable Dwarf White*, most useful for early and late use.

Cress.

Curl-leaved, lasts longer in perfection than the plain leaved.

Cucumber.

Telegraph, *Rockford's Market*, *Carter's Champion* and *Syon House*, for frame cultivation.

Long Ridge, for outdoor growth.

Short Prickly or *Gherkins*, for pickling.

Leek.

Broad-leaved London, *Musselburgh*, *Holborn Model*, and *Ayton Castle*.

Lettuce.

1. *Paris White Cos*, *Daniell's Continuity*, and *New York*, the best for summer use.
2. *Black-seeded Bath Cos*, stands the winter well in the open ground.
3. *All the Year Round*, a good cabbage variety.
4. *Hicks' Hardy Green Cos*, a fine winter kind.
5. *Lee's Hardy Hammersmith Green*, the most hardy of the cabbage varieties.

Mustard, White.**Onion.**

1. *Cranston's Excelsior*.
2. *Brown Globe* and *Main Crop*.
3. *James' Long Keeping*, a very late keeper.
4. *White Naples*, good for pickling.
5. *Globe Tripoli*, the best of all the Tripolis.
6. *White Lisbon*, the best for pulling early in spring.
7. *The Queen*, the quickest in coming to maturity from spring-sown seeds.
8. *White Elephant*, for autumn sowing.
9. *Potato* or *Underground*, very mild and early.

Parsley.

Best Curled.

Parsnip.

Hollow Crowned and *The Student*.

Peas.

1. *Sangster's No. 1*, or *William I.* and *American Wonder*, for first crop.
2. *Gradus*, a variety with large pods well filled with Peas of fine flavour.

Peas—continued.

3. *Criterion*.
4. *Telegraph*, a fine variety.
5. *Maincrop*.
6. *Stratagem*, dwarf, late, good.
7. *Carter's Michaelmas*.

Potatos.

1. *Sharpe's Victor*, for early supply, or for cultivation in frames.
2. *Veitch's Improved Early Ashleaf*, early, fine and good.
3. *Reading Russet*, very prolific and handsome.
4. *Vicar of Laleham*, a great main cropper.
5. *Satisfaction*, good quality and excellent cropper.
6. *Up to Date*, heavy cropping late variety.

Amongst newer sorts that may be recommended as prodigious croppers and said to be *comparatively* disease-resisting, but at present expensive, are *Northern Star*, *Sir John Llewellyn*, *Evergood*, *Edward VII.* and *Discovery*.

Radish.

Earliest Frame, *White Olive*, *Earliest of All*, *Wood's Frame*, *French Breakfast*, *Scarlet Olive*, &c.

Rhubarb.

Early Scarlet, *Dawes's Champion*, *Johnstone's St. Martin's*, and *Myatt's Victoria*.

Spinach.

1. *Improved Victoria Round Seeded*, for summer use.
2. *Flanders*, a valuable winter Spinach with smooth seeds.

Tomatos.

Winter Beauty, for early forcing; *Lister's Prolific*, for main crop indoors; *Earliest of All*, *Holmes' Supreme*, *Frogmore Selected*, and *Chemin Rouge*, for cultivation out of doors.

Turnip.

1. *Early White Milan*, *Carter's Early Forcing*, and *Early Snow Ball* for an early crop.
2. *Six Weeks*, good for succession.
3. *Green-top White* and *Orange Jelly*, to be sown in August, for use during winter.

Vegetable Marrows.

Long White or *Long Green*, *Custard*, and *Pen-y-byd*.

FRUIT.

Apricots.—This delicious fruit should be grown by every cottager, as it always finds a ready sale, and in scarce seasons commands a good price. A south wall is the best for it, but good fruit may be grown on an east or west aspect, except in the northern counties, where it does not always ripen well.

1. *Moorpark*. Large, and the best of all.
2. *Shipley's*. Early, hardy, and prolific.
3. *Early Orange*. A small early variety.

Apples, dessert.

1. *Cox's Orange Pippin*. A dessert Apple of the highest excellence, a good cropper, and well adapted for growing in dwarf bushes or pyramids (Fig. 37).
2. *Blenheim Orange Pippin*. A well-known variety of high quality. The fruits are large, and of fine flavour. In season from November to February. It may be used for dessert, or for cooking purposes.

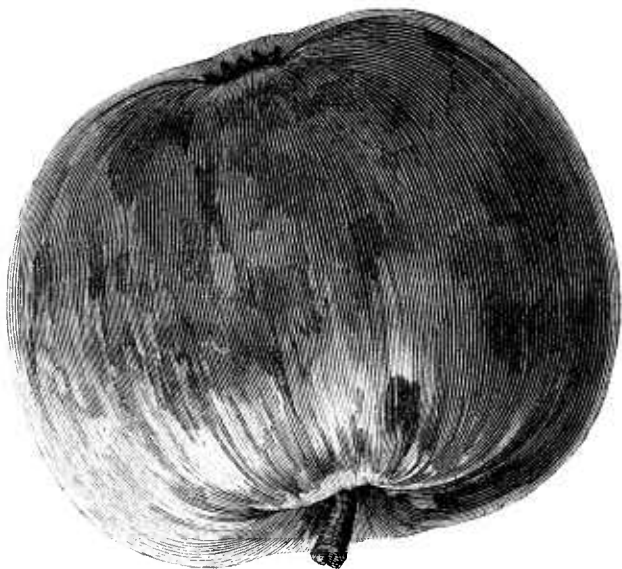


Fig. 37.—Apple Cox's Orange Pippin.

3. *Kerry Pippin*. An excellent Apple of medium size; the tree is of dwarf growth, and a great bearer. The flesh is yellow, melting, and rich.
4. *King of the Pippins*. This beautiful Apple is very hardy, and a great bearer; fruit middle size and not of first quality.
5. *Fearn's Pippin*. This is a very handsome fruit and worthy of a place in any collection. The tree is very hardy and a good bearer. It keeps a long time if packed in sand.
6. *Scarlet Nonpareil*. If a fine loamy soil, with a gravelly sub-soil, is possessed, then no Apple is more valuable than this.

It is a beautiful regular fruit, of a fine red colour next the sun.

7. *Cockle Pippin* makes a handsome dwarf tree, and is a good bearer. The fruit is of a middle size, and frequently keeps till Midsummer. The tree is very hardy.
8. *Worcester Pearmain*. This is a middle-sized fruit. An abundant bearer and showy. Flesh tender, juicy, with a pleasant flavour. Ripe August and September.

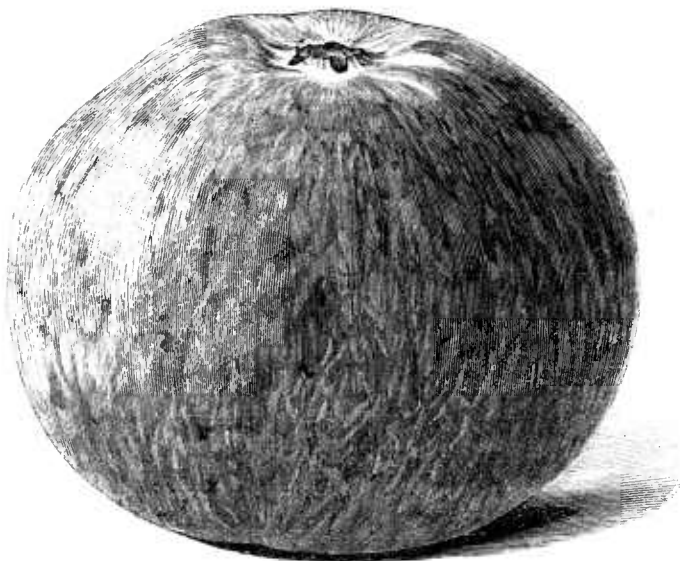


Fig. 38.—Apple Charles Ross.

Other good dessert Apples that may be depended upon to crop freely in most soils and situations are *Barnack Beauty* (see Fig. 39), *Devonshire Quarrenden*, *Charles Ross* (new) (Fig. 38), *Beauty of Bath*, *Duchess of Oldenburgh*, *Irish Peach*, *James Grieve*, *American Mother* (an excellent dessert Apple), *Sturmer Pippin*, *Allington Pippin*, *Lord Burghley*, and *Christmas Pearmain*.

Apples, kitchen.

1. *Lord Suffield*. This is a large, conical-shaped, greenish-yellow Apple. Its flesh is firm, juicy, and briskly flavoured. The tree is a great bearer, and hardy, but cankers on many soils. One of the best early varieties.

2. *Hawthornden*. This Apple has many claims upon the attention of the amateur. It ripens in October, and keeps until Christmas, or longer.
3. *Stirling Castle*. Second early. Not suitable for orchard standard, but excellent as a bush.
4. *Northern Greening*. Prolific. A very hardy Apple for damp soils.
5. *Waltham Abbey Seedling*. Large, colour pale yellow, red next the sun. Season, September to December.

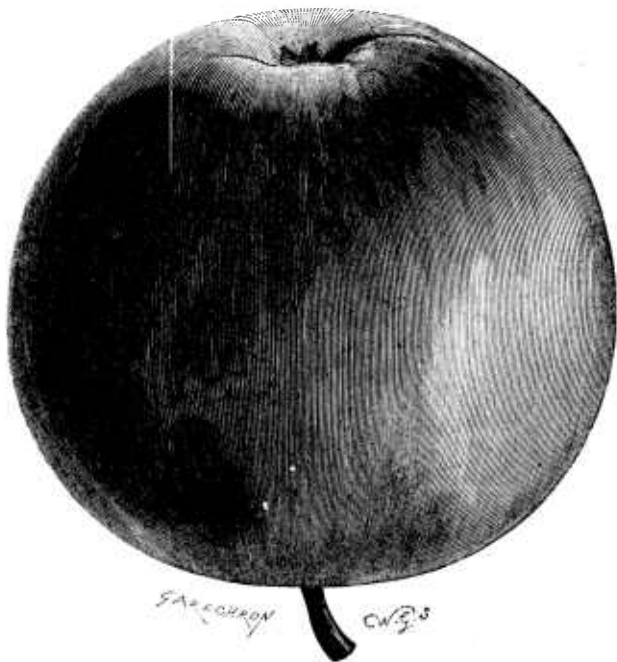


Fig. 39.—Apple Barnack Beauty.

6. *Dumelow's Seedling*. Sometimes called Wellington. Season, November to March. This is perhaps the most valuable kitchen Apple in cultivation. The fruits are large, round, and of a yellow colour, with a little red colour on the side next the sun. It has yellow, firm, and crisp flesh, a brisk acid flavour.
7. *Cellini Pippin* (Fig. 40). A large and handsome Apple, roundish in shape, and of a deep yellow colour, mottled with red on the

sunny side. Its season is from October to December, and in addition to its cooking properties it is useful uncooked.

8. *Warner's King*. A fine late variety.

9. *Newton Wonder*. One of the best of newer kitchen varieties, which will keep good until spring.

Other varieties that crop abundantly are *Keswick Codling*, *Lord Grosvenor*, *Frogmore Prolific*, *Beauty of Kent*, *Ecklinville Seedling*,

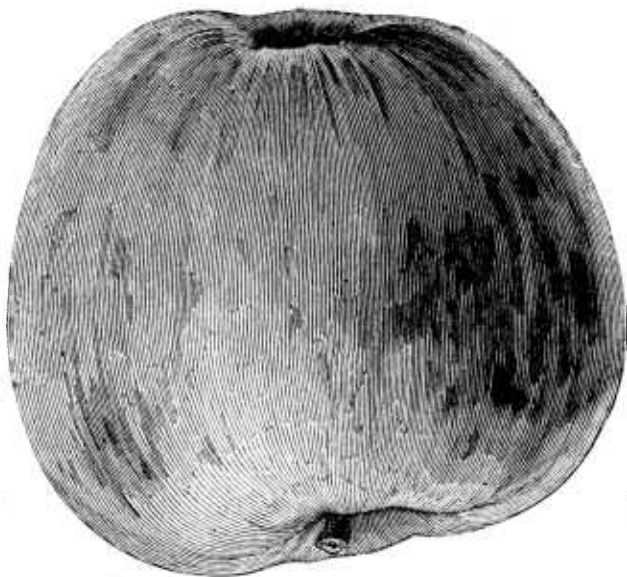


Fig. 40.—Apple Cellini Pippin.

Golden Noble (Fig. 41), *Lane's Prince Albert*, *Guscoigne's Scarlet-Nonpareil*, *Royal Late Cooking*, *Alfriston*, *Seaton House*, *Betty Geeson*, *Stone's Seedling*, *Royal Russet*, and the new variety *King Edward VII*.

Pears—for training on walls, or as dwarf standards (see Figs. 31, 32, 33).

1. *Williams' Bon Chrétien*. This is an early variety, coming into use towards the end of August. The fruit is large, and of a yellowish colour, tinged with green, with white, melting, and deliciously-flavoured flesh. The tree is a free bearer, and the fruits fetch good prices in the market; but they must be gathered before they become ripe, or they will keep good only a few days. Gather, and pack carefully to avoid bruising.

2. *Beurré d'Amanlis*. This is one of the very best Pears ripening in the month of September, and as the tree is hardy and a first-rate bearer it can, although a somewhat straggling grower, be well recommended for the cottage garden. The fruits are large, yellowish-green, covered with patches of russet, and are of unexceptionable quality, but they will not keep long.

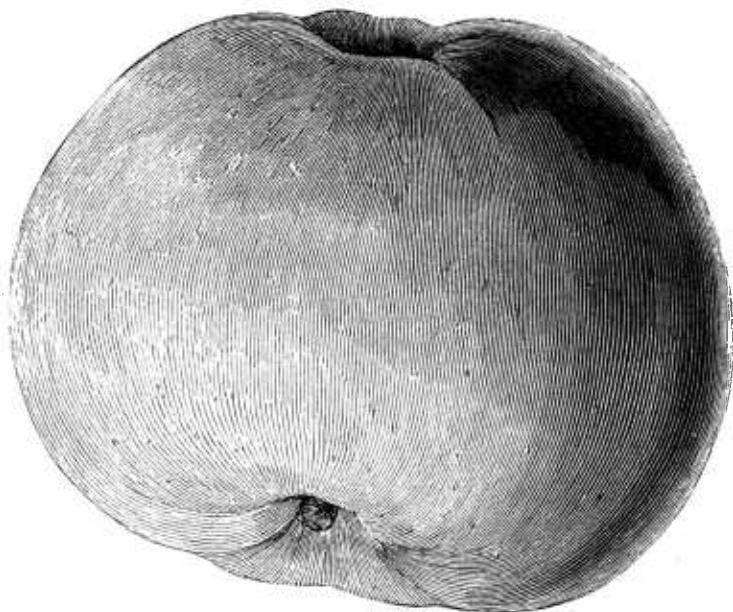


Fig. 41.—Apple Golden Noble.

3. *Marie Louise* is one of the finest—by some considered the best—of October Pears. It is a good bearer, and exceedingly rich in flavour, the fruits being large and pyriform in shape.
4. *Winter Nelis* is a medium-sized fruit, with fine-grained melting flesh, and rich, sugary, vinous flavour. The tree is hardy and a good bearer. Season, November—February.
5. *Louise Bonne of Jersey*. This is a good garden Pear, being a great bearer on standards, and of delicious quality, though only of medium size.
6. *Doyenné du Comice*. This is a truly grand Pear, of large size and

pyramidal form, and the best of all Pears in its season for quality. It is of a greenish-yellow colour, and heavily dotted with patches of brown russet. The flesh is yellowish-white, melting, buttery, exceedingly rich, and slightly perfumed. Season, October—November.

7. *Catillac*. This is recommended as a stewing Pear, in which section it is undoubtedly the best and most profitable to grow. The

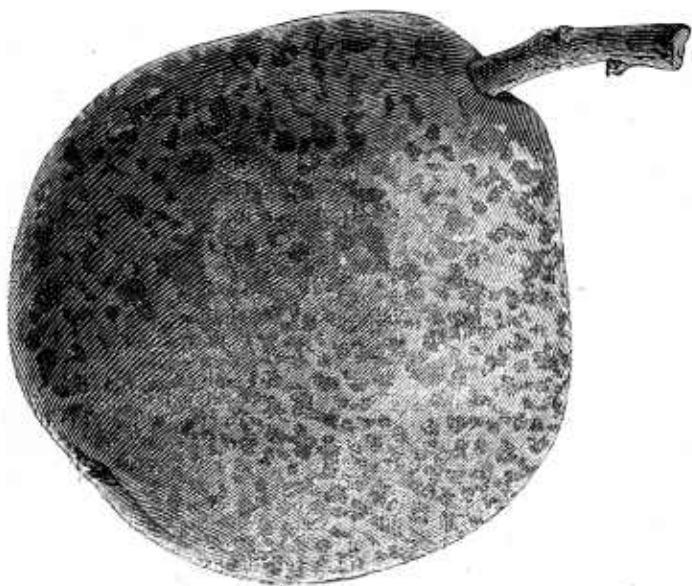


Fig. 42.—Pear Bergamotte d'Esperen.

fruits are very large, and the flesh white, somewhat gritty, but of good flavour. It comes into use in December, and will keep till April.

Other excellent varieties of Pears are *Beurré Superfin*, *Conference*, *Jargonelle*, *Madame Treyre*, *Souvenir du Congrès*, *Pitmaston Duchess*, *Easter Beurré*, *Charles Ernest*, *Emily d'Heyst*, *Bergamotte d'Esperen* (see Fig. 42), *Fondante de Thirriott*, and *Winter Nelis*.

Plums.

1. *Greengage* needs no comment, as it has always stood in the highest repute.

2. *Denyer's Victoria*, an excellent, large, bright-red Plum, of fine quality, and a heavy cropper.
3. *Rivers' Early Prolific*. An oval-shaped purple Plum, of medium size and good flavour. The tree is hardy, and an immense bearer.
4. *Jefferson's* (see Fig. 43). A large golden-yellow coloured variety of very rich quality, coming into use early in September.
5. *Farleigh Prolific Damson*. Very fertile.
6. *Belle de Septembre*. A very fine late cooking sort, in use in October. It is a large, roundish red Plum, and fine for preserving.
7. *Coe's Golden Drop*. One of the most delicious of dessert Plums. It will hang a considerable time on the tree if closely netted from birds.
8. *The Czar*.
9. *Monarch (Rivers')*.
10. *Pond's Seedling*.

Cherries.

1. *May Duke*. The merits of this variety are too well known to require comment. It bears very freely on dwarfs, and will stand pruning well.
2. *Black Tartarian*. A good variety for walls, or as standards, medium in size, and almost black in colour; very rich in quality.
3. *Bigarreau Napoléon*. A large and very handsome Cherry, of first-rate quality. The tree is a very heavy bearer. Season, July and August.
4. *Morello* is a valuable fruit. It may be trained against a shady wall, or as a dwarf standard; is an abundant bearer. In pruning, the branches, being slender, are apt to be left too thick, which is a great fault. The fruit is borne on the young wood of the last year, which should be remembered at the time of pruning.
5. *The Noble*. An excellent market or garden Cherry. The fruits are of very large size, and of good flavour, the flesh being very firm. It is a very valuable new Cherry.
6. *Belle Magnifique* is a bright-red Morello Cherry; most abundant cropper, doing well as a bush.

Figs.

For out-of-door cultivation against walls, or for planting in a house, there is none better for amateurs than Brown Turkey.

Gooseberries.

1. *Early Sulphur*. The earliest small variety.
2. *Red Warrington*. Keeps late; a good bearer; of a good size, and rich flavour. It is a strong grower.
3. *Lancashire Lad*.
4. *Woodward's Whitesmith* is an upright grower, a good bearer, and of excellent flavour.
5. *London*. This is one of the very largest varieties grown. It is a smooth red, of fine quality.
6. *Crown Bob*. A large oblong, hairy, bright-red sort, a good bearer, and of fine flavour.

7. *Whinham's Industry*. Very prolific; excellent to grow for bottling green.
8. *Langley Beauty* (see Figure on p. 57). A yellow-fruited variety of good flavour obtained from a cross between *Railway* and *Yellow Champagne*.
9. *Langley Gage*. An excellent green-coloured Gooseberry of fine flavour.



Fig. 43.—Jefferson Plum.

The Lancashire show varieties may be grown, but many of them are remarkable for their size only. The new early Gooseberry *May Duke* should be planted, as it affords fruits fit for making tarts as early as the first week in May.

Currants.

Red Comet, Dutch; White Dutch, Red and White Grape; Black, Naples, and Boskoop Giant are the best.

Boskoop Giant (black) is considered by many growers to be less liable than others to attacks from the Currant-bud mite.

Raspberries.

1. *Red Antwerp*. 2. *Northumberland Fill Basket*. 3. *Superlative*. 4. *Baumforth's Seedling*.

Strawberries.

1. *Royal Sovereign* (see Figure on p. 8) is perhaps the best for an amateur, being a most prolific handsome fruit, although there are others superior to it in flavour.
2. *President*. If the soil is loamy and rich, this kind is not surpassed; being a strong grower, it requires considerable room.
3. *The Laxton*. A newer variety, free cropping, like *Royal Sovereign*, but the fruits are firmer, and the flavour rather better.
4. *Vicomtesse Héricart de Thury*. One of the very best varieties for general cultivation, on account of its fine size and extraordinary cropping qualities.
5. *Sir Joseph Paxton*. A large early hardy and free-bearing variety, of fine flavour.
6. *Elton* is a fine late kind, and a free bearer, raised by Mr. T. A. Knight.
7. *British Queen* or *Dr. Hogg*. These are the best of the late varieties.
8. *Perpetual-fruited variety St. Antoine de Padoue* (see Fig. on p. 9).

Grapes, out-of-doors.

1. *Black Cluster*. A prolific variety; is good for making wine.
2. *Royal Muscadine*. A well-known excellent white Grape, with large bunches; for culture against open walls.
3. *Gammy Noir*. A black Grape that has succeeded well in the out-of-door Vineyards at Castell Coch, and Swanbridge, near Cardiff.
4. *Reine Olga*. An excellent red-coloured Grape for cultivation against a wall or house-end, where it ripens well in the southern counties.

Grapes, indoors.

Black Hambro', Alicante, Gros Colmar. Of white varieties, *Sweet Water, Chasselas Napoleon*, and *Muscat of Alexandria*, where means of cultivation are available.

SELECT LIST OF FLOWERING PLANTS.

THE following lists indicate a few of the many hardy, free-growing ornamental flowering plants which are adapted for the amateur's or cottager's garden. We have indicated the average heights to which they attain, and the colour of their flowers, because in sowing annuals and planting the more permanent perennials, an orderly and well-contrasted arrangement should always be observed. The dwarfest, of course, should occupy the front line. Some colours are much more effective when placed in contrast to other colours, and inharmonious arrangement in this respect should be carefully avoided. Rose-coloured or red flowers should not be placed next scarlet or orange, nor orange next yellow, nor blue next violet, nor rose next violet. White will relieve any colour, but should not be placed next yellow. Orange agrees well with light blue, yellow with violet, dark blue with orange-yellow,

white with pink or rose, lilac with yellow. By observation and attention to these rules, the amateur may have his flower borders vie in beauty and arrangement with those of greater pretensions.

ANNUALS.

Annuals, or Plants of One Season's Duration only.—These are sown in spring—about March—and again for succession, if desired, in April, and flower accordingly, about six weeks on the average intervening between sowing and flowering; or the first sowing may be considered as blooming in the early summer months and the second sowing towards the end of summer, depending somewhat on the season. Many annuals will be found to scatter their seeds in autumn and produce young plants, which, if transplanted to favourable spots, will often survive the winter and flower early the following season. Fl. is printed below for “flowers.”

Amaranthus caudatus (*Lore-lies-bleeding*): 2 ft., erect, branching; fl. crimson, in drooping spikes, showy.

Bartonia aurea: 1½ ft., spreading; fl. brilliant yellow, with conspicuous stamens.

Calliopsis Drummondii: 1 ft., erect, branching; fl. heads orange-yellow with crimson eye.

Calliopsis bicolor: 2 ft., erect, diffusely branching; fl. heads yellow with crimson centre; also *C. lanceolata*.

Callistephus hortensis (*China Aster*): 1—1½ ft., erectly branching; fl. heads various in colour. The Chrysanthemum-flowered and Perfection Asters are good types for general cultivation.

Centaurea Cyanus (*Corn-flower*): 2½ ft., erect, branching; fl. heads blue and other colours.

Chrysanthemum tricolor: 2½ ft., erect; fl. white, yellow, and black.

Collinsia bicolor: 1½ ft., erect, slightly branched; fl. lilac and white.

Convolvulus tricolor (*Convolvulus minor*): 1½ ft., spreading; fl. blue, yellow, and white, trumpet-shaped.

Delphinium Ajacis (*Rocket Larkspur*): 1 ft., erect, branching; fl. blue, pink, or white, in hyacinth-like spikes.

Eschscholtzia californica: 1 ft., spreading; fl. poppy-like, yellow, with orange eye.

Gilia laciniata: ½ ft., erect, branching; fl. deep blue, in globular heads.

Helianthus annuus (*Sunflower*): 6—8 ft., erect, bold; fl. heads very large, golden-yellow. The double forms are preferable.

Iberis umbellata (*Candytuft*): 1 ft., erect, compactly branching; fl. white, purple, or rosy-purple.

Lathyrus odoratus (*Sweet Pea*): 4—3 ft., climbing; fl. various, fragrant. Sow in February, March, and April in well dug and manured land. (See article, p. 108.)

Linum grandiflorum (*Red Flax*): 1 ft., erect; fl. large and showy, brilliant crimson.

Malcolmia maritima (*Virginian Stock*): red and white; very pretty and free.

Malope grandiflora : 2 ft., erect, branching ; fl. large purplish-crimson, mallow-like.

Mathiola annua (*Ten-week Stock*) : 1—1½ ft., erect, branching more or less ; fl. various, highly fragrant. The German varieties are specially fine, and exceedingly varied in colour.

Nemophila insignis : ½ ft., spreading ; fl. cup-shaped, deep blue with white centre.

Papavers : The Shirley and Iceland Poppies are exceedingly pretty flowers, growing from 1—2 ft. high, and affording flowers of many shades of attractive colours. Sow the seeds in the early part of April.

Pharbitis hispida (*Convolvulus major*) : 8—10 ft., twining ; fl. various, trumpet-shaped ; the purple and the crimson are very fine.

Reseda odorata (*Mignonette*) : ¾ ft., spreading, densely branching ; fl. greenish, odoriferous.

Salpiglossis sinuata : 2 ft. : there are many varieties ; sow at the end of April.

Schizanthus pinnatus : 2 ft. : the flowers are of various colours, and are very attractive. The seeds should be sown in the first fortnight in April.

Tropæolum aduncum (*Canary-flower*) : 8—10 ft., climbing ; fl. yellow with fringed petals.

Tropæolum majus (*Nasturtium*) : 8—10 ft., climbing ; fl. various ; the rich blood-red variety is the finest. Of dwarf varieties Tom Thumb is one of the best.

Viscaria oculata : 1½ ft., erect, branching ; fl. rosy-purple with dark eye.

Zinnia elegans : 1½ ft., erect, branched ; fl. scarlet and other colours. The double varieties are very handsome.

BIENNIALS.

Biennials, or Plants of Two Seasons' Duration.—These require to be sown one year to flower the next. They should be sown about May, and transplanted while young to where they are required to blossom.

Campanula Medium (*Canterbury Bell*) : 1—1½ ft., erect, branching ; fl. bell-shaped, purple, rose, or white, from June to August.

Cheiranthus Cheiri (*Wallflower*) : 1½—2 ft., erect, branching ; fl. yellow or blood-colour, fragrant, from April to July. The double-flowered forms are very handsome.

Dianthus sinensis (*China Pink*) : 1 ft., erect, tufted ; fl. various colours, single or double, from July to October.

Dianthus barbatus (*Sweet William*) : erect, slightly branching ; fl. ranging from crimson to white.

Digitalis purpurea (*Foxglove*) : 2—3 ft., fl. lilac, spotted or white.

Lunaria biennis (*Honesty*) : 2 ft., erect, branching ; fl. cruciferous, purple, opening about April. The glossy, silvery partition of the dried seed-pod is a favourite object amongst dried flowers.

Mathiola simplicicaulis (*Brompton Stock*) : 2—3 ft., erect, sparingly branching ; fl. crimson, in very long spikes, odoriferous, produced in June.

Oenothera Lamarckiana (*Evening Primrose*): 3—4 ft. high, sparingly branched; fl. bright yellow. *O. macrocarpa* yellow, is of dwarfer habit and there are many others.

Scabiosa atropurpurea (*Sweet Scabious*): 3 ft., erect, branching; fl. blackish-purple, or other colours, opening from July to September.

PERENNIALS.

Perennials, or Plants of many Years' Duration.—These are either bulbous or fibrous rooted, and are multiplied either by offsets from the bulbs or by divisions of the root. They rarely flower before the second year when raised from seed, and sometimes, as in the case of



Fig. 44.—*Chrysanthemum maximum*.

bulbs, take much longer. The following are well-marked popular kinds:

Agapanthus umbellatus, bulbous, umbels of blue flowers, requires protection in winter.

Althæa rosea (*Hollyhock*): 6—8 ft., erect, stately; fl. various, from August to October. Should be frequently renewed from seed of double flower. Subject to fungous attacks (*Puccinia*).

Anemone coronaria (*Poppy Anemone*): $\frac{1}{2}$ ft., tufted; fl. poppy-like, various in colour, double or single, from May to July.

Anemone japonica (*Wind Flower*): 2 ft. to 3 ft., erect; fl. mauve coloured, in late summer. The variety *alba* is generally preferred to the type. There are now several forms of this.

Antirrhinum majus (*Snapdragon*): 2 ft., erect, branching; fl. various, from June to October.

Aster (*Michaelmas Daisy*). There are numerous varieties, differing in height and colour, and some of the best should be cultivated in all gardens.

Aubrietia purpurea : $\frac{1}{2}$ ft., spreading in tufts ; fl. cruciform, lilac-purple, from March to May. There are several varieties. *Leichtlinii* and *Dr. Mules* are among the best.

Calochortus (*Mariposa Lily*). These are delightful Californian flowers, and to begin with the species *C. luteus* and *venustus* may be recommended, but are not easy to grow.

Campanula carpatica : 1 ft., tufted ; fl. bell-shaped, blue or white, from June to October. There are many other species worth growing.

Campanula pyramidalis (*Chimney Campanula*) : 3—5 ft., erectly branching ; fl. blue, in long branched spikes, from July to September.

Centranthus ruber (*Red Valerian*) : 2—3 ft., diffusely branching ; fl. red, crimson, or white, from June to October, suitable for walls.

Chrysanthemum sinense (*Chrysanthemum*) : 4—6 ft., erect, branching ; fl. various, in November. A few select varieties should adorn the cottage walls (see p. 111).

C. maximum : 2—3 ft. ; fl. white (see Fig. 44 on p. 95).

Convallaria majalis (*Lily of the Valley*). This pretty, sweetly-scented flower is well known, and should be grown in every garden.

Delphinium formosum (*Bee Larkspur*) : 3—4 ft., erect, slightly branching ; fl. large, deep blue, white eye, from June to August.

Dianthus Caryophyllus (*Carnation*) : 2 ft., erect, branching ; fl. various, aromatically fragrant, in July and August. This includes Carnations, Picotees, Cloves, &c., of which select double varieties are very beautiful.

Dianthus plumarius (*Pink*) : 1—1 $\frac{1}{2}$ ft., erect, branching, from tufts of grassy leaves ; fl. deliciously fragrant, white, pink, or laced, in June and July. Double varieties, like *Mrs. Sinkins*, only should be chosen.

Dictamnus albus (*Fraixinella* or *Dittany*) : 2—3 ft., erect ; fl. purplish or white, in long spikes, in June and July. The leaves have a powerful aromatic scent.

Dielytra spectabilis : 2 ft., diffusely branching ; fl. bag-shaped deep rose in arching, pendent spikes, in May and June, native of China.

Doronicum plantagineum : ht. 2 ft. ; fl. yellow.

Fuchsia Riccartoni : 3 ft. ; fl. pink.

Funkias : several species.

Helleborus niger major (*Christmas Rose*) : $\frac{3}{4}$ ft. tufted ; fl. large white, from December to February. There are many varieties.

Hepatica triloba : $\frac{1}{3}$ ft., tufted ; fl. blue, pink, or white, single or double, very profusely produced in spring, before the leaves, about March and April.

Incarvillea Delavayi. A perfectly hardy species from China, growing about 1 $\frac{1}{2}$ ft. to 2 ft. high, erect ; fl. bright rose red. Corolla-tube : about 3 in. long, and limb 3 $\frac{1}{2}$ in. broad. A very choice flowering plant for cultivation in the border. May be propagated by seeds, but the young plants will not flower until two or three years old.

Iris germanica : 1—1 $\frac{1}{2}$ ft., tufted ; fl. purple, beautifully streaked, in June. There are many varieties of various colours.

Lathyrus latifolius (*Everlasting Pea*) : 4—6 ft., climbing; fl. deep rose or white, from July to October.
Lilium candidum (*White Lily*) : bulbous, 3—4 ft., erect; fl. large, white, funnel-shaped, fragrant, about July.



Fig. 45.—A Garden of Herbaceous Flowers.

Lilium croceum (*Yellow Tiger*): bulbous, tall, very showy.

Lilium tigrinum (*Tiger Lily*): bulbous, 3—4 ft., erect; fl. large, orange-red with black spots, the petals reflexed, in July and August. The Double Tiger Lily is a very fine form.

Lupinus polyphyllus (*Lupin*): 3 ft., tufted; fl. violet-blue in long erect spikes, in June and July.

Lychnis chalcedonica: 2½—3 ft., erect; fl. brilliant scarlet in dense roundish heads, in June and July.

Mimulus moschatus (*Musk plant*): ½ ft., spreading; fl. small, yellow, all the summer. The leaves viscid and having an agreeable odour.

Monarda didyma: 2½ ft., erect; fl. bright scarlet, July to September. A very desirable plant.

Myosotis palustris (*Forget-me-not*): 1 ft., erect; fl. light blue, very pretty in masses, in April and May. Other Forget-me-nots, such as *M. dissitiflora* and *M. alpestris*, may be substituted.

Pentstemon barbatus: 3 ft., tall, sparingly branching; fl. scarlet, with a hairy throat, panicked, in July. There are numerous cross-bred varieties well deserving of cultivation, having extremely large and attractively-coloured flowers.

Papaver orientale (*Oriental Poppy*): 2—3 ft., erect; fl. very large, brilliant scarlet with a black spot on each petal, in May or June.

Phlox paniculata (*Phlox*): 2—3 ft., erect; fl. various, in dense panicles, from July to September.

Scabiosa caucasica: ht. 3 ft.; fl. white or lavender.

Tritoma Uvaria (*Poker plant*): 4—6 ft., tufted; fl. orange red, in dense erect spikes, from August to October. There are numerous allied species, all handsome.

Trollius europæus (*Globe Flower*): fl. yellow.

Viola tricolor (*Pansy* or *Heartsease*): ½ ft., branches spreading; fl. large, various, all the summer. Choice, finely-coloured sorts should be chosen.

This list might be indefinitely extended. No amateur's garden should be without such hardy bulbs as SNOWDROPS, CROCUSES, SCILLAS, CHIONODOXAS, IRISES, FRITILLARIES, DAFFODILS, and JONQUILS.

ALPINE OR ROCK PLANTS.

Acæna microphylla: dwarf, foliage neat pinnate.

Acantholimon venustum: fl. pink, ht. 3 to 4 in., July.

Achillea clavennæ: fl. white, ht. 9 in., June.

Achillea tomentosa: fl. yellow, ht. 6 in., July and August.

Alyssum saxatile: fl. yellow, ht. 4 in., Spring.

Androsace lanuginosa, pink; *A. sarmentosa*, rose coloured; *A. carnea*, pink; ht. 4 to 6 in., May and June.

Anemone alpina, *A. narcissiflora*, *A. palmata*, *A. Pulsatilla*, and *A. vernalis*.

Antennaria tomentosa: fl. white, ht. 6 in., July and August.

Aquilegia alpina, *A. cœrulea*, and *A. Stuarti*, and various hybrids.

Arabis albida : single and double varieties, and *A. lucida*.

Arenaria balearica, *A. grandiflora*, *A. purpurascens*, and *A. tetraquetra* ; ht. 2 to 5 in.

Aster alpinus : fl. blue, ht. 7 in., May and June.

Campanula garganica, *C. isophylla*, *C. Waldsteiniana*, &c.

Cyananthus lobatus : fl. blue, ht. 4 in., August to October.

Cyclamen Coum, &c.

Dianthus alpinus, *D. deltoides*, *D. sylvestris*, *D. neglectus*.

Draba ciliata : fl. white, ht. 3 to 4 in., Spring.

Dryas Drummondii, yellow and *D. octopetala*, white ; low trailers, July.

Daphne Blagayana, a dwarf evergreen shrub ; and *D. Cneorum*, with very fragrant pink flowers.

Edraianthus dalmaticus.

Erica carnea, a dwarf shrub.

Erinus alpinus : fl. purple, ht. 3 in., Spring.

Erodium macradenium and *E. Reichardi*.

Geranium cinereum, &c.

Geum montanum : fl. yellow, ht. 9 in., May and June.

Gypsophila cerastioides : fl. white, ht. 6 in., Midsummer.

Helianthemum, in variety.

Hypericum reptans.

Iberis Tenoreana and others : fl. white, ht. 6 to 8 in.

Leontopodium or *Gnaphalium alpinum* (*Edelweiss*).

Linaria alpina : alpine toadflax.

Lithospermum prostratum : trailer, fl. blue, Summer.

Lychnis alpina and *L. Lagascæ*.

Myosotis alpestris : dwarf *Forget-me-not*.

Narcissus minimus and others.

Omphalodes verna and **O. Luciliæ** : fl. pale blue, July to October.

Onosma taurica : fl. yellow, ht. 9 in., Midsummer.

Phlox amœna, *P. setacea*, &c.

Polygala Chamæbuxus : fl. white and yellow, ht. 6 in., May and June.

Potentilla alpestris : fl. yellow, ht. 6 in., May to August.

Primula Auricula, and other hardy *Primulas*.

Ramondia pyrenaica : fl. purple, ht. 6 in., June and July.

Ranunculus, several species.

Saxifragas, selection of.

Sedums and **Sempervivums**, numerous kinds.

Spiræa crispifolia : dwarf shrub, fl. red.

Thalictrum anemonoides : fl. white, ht. 6 in., April and May.

Veronica spicata, *V. saxatilis*, &c.

FLOWERS FOR BOUQUETS AND TABLE DECORATION.

THERE are certain flowers that are specially valuable, by reason of their grace and beauty, for use in the making of bouquets and the decoration of the dinner-table ; and amongst them *Gypsophila paniculata* is



Fig. 46.—Bouquet of Roses.

supreme. It is quite hardy, and will grow two feet or more high in the herbaceous border. A double-flowered variety has been distributed by Messrs. D. S. Thomson & Sons, Wimbledon, and the flowers of this will be found very useful by the amateur florist, though they will not exactly take the place of those of the single variety. Many other flowers will readily suggest themselves to the amateur, such as Pinks, Carnations, Roses, Lily of the Valley, Sweet Peas, Chrysanthemums, and Mignonette among outdoor flowers; and Tuberose, Camellias, Cyclamens, many species of

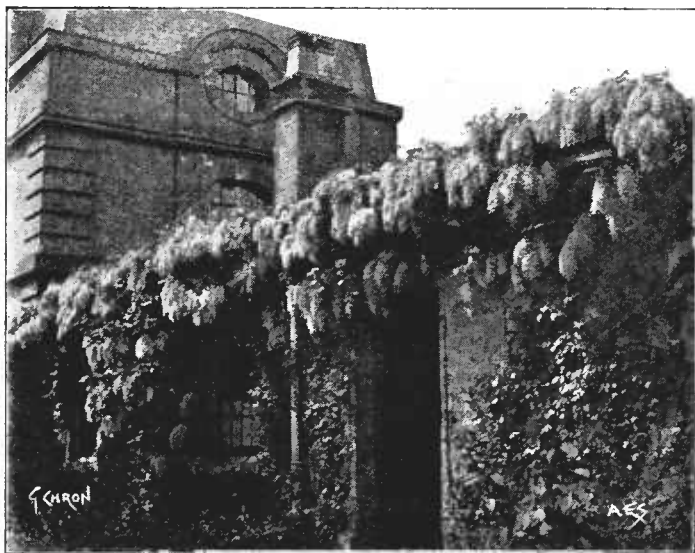


Fig. 47.—Wistaria in bloom on a wall.

Orchids, Gardenias, Roman Hyacinths, White Marguerites, Deutzias, &c., among house-plants; also hardy and exotic Ferns, *Thalictrum adiantifolium*, &c. (hardy); *Myrsiphyllum asparagoides* (Smilax), for green foliage.

In the making of bouquets, and in decorating a dinner-table, or arranging flowers in vases, they should be arranged as lightly as possible, not crowding them together, but using them in such a manner that the individual form and colour of each may be seen to good effect. Where colours are used, good taste must be exercised in blending or contrasting them.

Flowers for the dinner-table should be so arranged that they will not interrupt the view across the table, or prevent the guests talking conveniently to those sitting opposite to them. One of the most charming arrangements we have seen was one consisting of the beautiful single flowers of *Rosa macrantha*, lying almost flat on the table.

CLIMBERS FOR WALLS.

IN all favourable situations, and on south and west aspects, walls, or sloping roofs, the VINE is the most appropriate plant, for, besides its beautiful foliage, it will produce Grapes of fair quality. The *Royal Muscadine*, *Gammy Noir*, and *Reine Olga* are the best varieties; and perhaps the *Black Cluster* the next best. For foliage alone, in districts where Grapes will not ripen, the *Isabella* is a good variety to plant, and it may be placed on other aspects. For flowers, ROSES, such as *Gloire de Dijon*, *Maréchal Niel*, *Climbing Devoniensis*, and *Turner's Crimson Rambler* may be recommended; also CLEMATIS (*C. montana*, *C. Jackmani* and *lanuginosa*); JASMINES (*Jasminum officinale* and *nudiflorum*); CHOISYA TERNATA; PASSION-FLOWER (*Passiflora cœrulea* and the variety *Constance Elliott*); HONEYSUCKLES (*Lonicera sempervirens* and *brachypoda* or *aureo-reticulata*); JAPAN QUINCE (*Cydonia japonica*); WISTARIA SINENSIS (see Fig. 47) and FORSYTHIA (*F. Fortunei* or *suspensa*). For ornamental fruits, PYRACANTHA (*Crataegus Pyracantha*) and COTONEASTER (*C. buxifolia*, *microphylla*, *Simonsii*, &c.). For foliage alone, especially on a north or damp wall, the IVY (*Hedera*) is to be preferred, as it is not only always green, but will soon dry the wall; the variety *algeriensis* is the most rapid grower, but there are many handsome-leaved varieties, both green and variegated. Some are very rampant, others small and of slow growth. Other suitable plants are VIRGINIAN CREEPERS (*Ampelopsis hederacea* and *Veitchii*—the latter the more elegant, and it clings naturally), VITIS COIGNETIÆ, and SWEET BRIAR (*Rosa rubiginosa*), whose fragrance is so grateful, especially after rain.

PROPAGATING VARIETIES OF POTATOS.

THE following remarks upon the quickest methods of propagating varieties of Potatos are made with a view to informing readers what is possible in this direction, rather than to recommend them for adoption in other than extreme cases. If a cultivator desires to increase his stock of seed-tubers of a particular variety that he has proved to be suitable to his locality and soil, he will generally find the old system best and safest. He can utilise the whole of the tubers as sets, and he may cut into two or more sets any tubers that may be unnecessarily large.

Owing to circumstances that need not be discussed here, however, new varieties of Potatos have latterly been sold at such high prices that the cultivator has been able only to purchase exceedingly small quantities,



Fig. 48.—*Jasminum angulare* growing against a wall.

or has had to wait several seasons for sorts that he would have made trials with earlier had prices been less prohibitive.

In cases, then, when the amateur is obliged to content himself with a pound or so of tubers, the methods of propagation shown in the illustra-

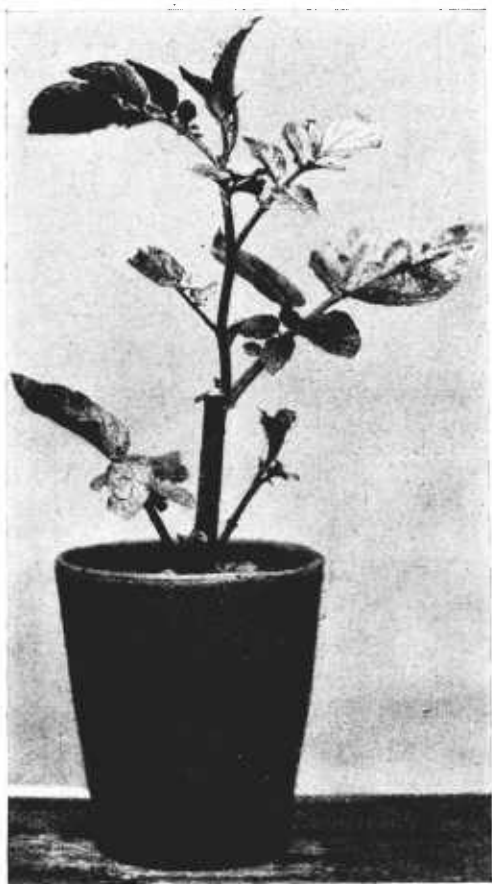


Fig. 49.—Potato plant raised from single eye, and afterward/s
“topped” to supply cutting, shown in next figure.

tions at Figs. 49—52 will help him to use them in the most economical manner possible. By using each "eye" or bud in a tuber to produce a distinct plant, less than fifty pounds of tubers may be made to plant a quarter of an acre of land in rows thirty-two inches asunder, and allowing thirty



Fig. 50.—Rooted Cutting of Potato.

inches between each set in the row. Cut out each eye from the tuber with a sharp knife, keeping to each eye as much of the substance of the tuber as possible. Then insert each eye in a separate pot, three inches in diameter, containing suitable soil, and get them well established in these pots before planting them out into the open ground. If the eyes are started

sufficiently early in the season—say February or March—and there exist the necessary means for cultivating them until the plants can be put into the ground, the first shoot that is made may be cut off a little above the collar when several inches high, and inserted in a pot filled with sandy soil, in which it will make roots as easily as would a cutting of *Pelargonium*. In Fig. 49 is shown a Potato-plant raised from a single eye,

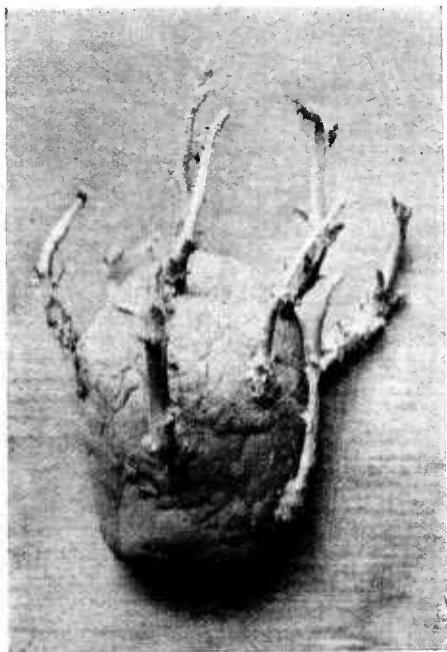


Fig. 51.—A sprouted tuber.

and in Fig. 50 a rooted cutting afforded by the plant just mentioned. The plant from which the cutting has been taken will produce side-shoots, which may also be removed and rooted in just the same way ; bearing in mind, however, that it is necessary to have all the plants established in pots ready for planting into the open ground in May. If such plants are put out early there need be no fear but that they will crop well ; it having been proved that a Potato-plant raised from a cutting will, under

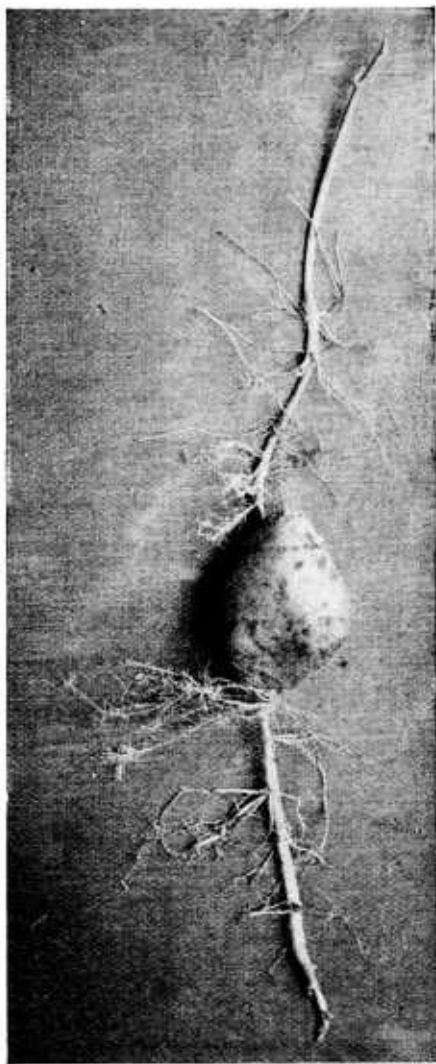


Fig. 52.—A tuber that has begun to run.

favourable conditions, produce a crop of tubers equal to that obtained from an undivided "set" or tuber.

Another method of propagation is shown in Fig. 51, where the tuber having been permitted to sprout, each little sprout will be taken off and treated as a cutting. Each eye usually affords several such cuttings. In Fig. 52 is illustrated a tuber that has commenced to "run" in the clamp. If such growths be cut into little pieces, each will grow and make a plant.

In these ways do expert cultivators work, and by so doing some have raised crops of nearly 450 pounds of Potatos from two pounds of tubers. If the propagation is not to be pushed beyond the single-eye system, an improvised frame is all the protection required. It should be erected on the south side of a thick high hedge or wall, and be provided with canvas blinds to be drawn over the plants at night, provided there is no glass covering.

We have witnessed a heavy yield of Potatos upon land that was previously manured as follows:—To each quarter of an acre, $3\frac{1}{2}$ loads of farmyard manure, $\frac{1}{4}$ cwt. of sulphate of ammonia, $\frac{1}{4}$ cwt. of muriate of potash, and $1\frac{1}{4}$ cwt. of superphosphate.

SWEET PEAS.

DURING the past few years especial attention has been drawn to the value of Sweet Peas for the decoration of the flower garden, and for supplying flowers for the making of nosegays and arranging in vases. The development that has taken place in the flower since Mr. Eckford commenced to raise cross-bred varieties has been wonderful. Not only in respect to colour has there been improvement, but in the form and size of the flowers, and inflorescence, most of the new ones being capable of producing three flowers on each spike. Mr. Eckford's success stimulated the efforts of other cultivators in this country and in America, and a bewildering number of varieties have been named and distributed in gardens, until, in 1900, the centenary year of the introduction of the Sweet Pea into this country, it was thought by some that a Society was needed to classify them, and to subject subsequent novelties to an inspection by a Committee in order that only those possessing marked improvement over existing varieties might be encouraged. To the action of this Committee it is due that the Sweet Pea has been raised to the dignity of an exhibition flower, and there are few horticultural shows in the summer season at which it is not a feature in competitive classes.

Sweet Peas may be cultivated as successfully by the amateur or cottager as by the professional gardener, unless the flowers are required for exhibition at an early date in summer. For general out-of-door culture the seeds should be sown in March and April, and successional flowers will be more surely assured if a sowing is made as early in March as possible, and at the end of April. Like most other plants, the Sweet Pea succeeds best when growing in well-prepared soil of a moderately rich nature, and is afforded ample room to develop its roots and shoots. The old practice was to sow the seeds in drills and stick

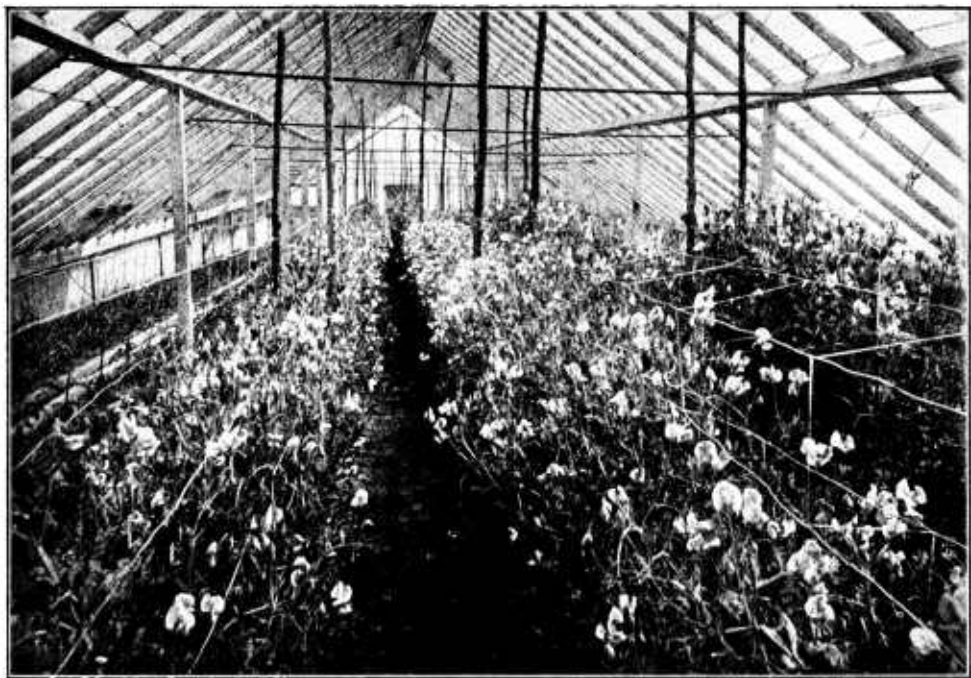


Fig. 53.—Sweet Peas flowering in a glasshouse in May, in Mr. Davis' Nursery, near Uckfield.

the plants in much the same manner as culinary Peas, but we think that a better effect is produced in the flower borders when the seeds are sown in clumps, keeping each clump to a single variety. Exhibitors and others who make a speciality of their culture, sow a few seeds (five or six) in five-inch pots, and grow them under glass until the seedlings are two or three inches high, planting them out into clumps in April, and protecting them by surrounding the plants with the spray from Birch or other branches.

Choice Varieties.

The following varieties may be recommended as the best in their respective colours:—*White*: Dorothy Eckford and Sadie Burpee; *Crimson*: Salopian, Mars, and King Edward VII.; *Yellow and Buff Shades*: Hon. Mrs. E. Kenyon, and Lady M. Ormesby Gore; *Pink*: Lovely, Prima Donna, Countess of Lathom, and Bolton's Pink; *Rose and Carmine*: Lord Rosebery and Prince of Wales, Her Majesty and Royal Rose; *Mauve*: Admiration and Dorothy Tennant and Fascination; *Blue*: Countess Cadogan, Navy Blue, and Emily Eckford; *Orange*: Miss Willmott, Lady Mary Currie and Gorgeous; *Blush*: Duchess of Sutherland and Modesty; *Picotee edged*: Maid of Honour; *Striped and Flaked*: Gaiety (white marked with purple), America (white marked with red), Grey Friar and Prince of Wales; *Bi-coloured*: Triumph and Prince Edward of York; *Violet and Purple*: Duke of Westminster and Duke of Clarence; *Maroon and Bronze*: Black Knight and Boreatton; *Lavender*: Lady Grisell Hamilton, Lady Nina Balfour, and Countess Radnor or New Countess; *Fancies*: Lottie Hutchins and Gracie Greenwood; *Magenta*: Captivation and George Gordon; *Cerise*: Coccinea and Scarlet Gem. The variety named last is one of the best of recent acquisitions, and is as nearly scarlet in colour as a Sweet Pea has yet been seen. Its qualities of size and form are of the highest.

CHRYSANTHEMUMS.

THESE popular autumn-flowering plants are so peculiarly suitable for the amateur's, and even for the cottager's, garden that a few words may be said here in addition to the hints given in the Calendars for the various months. There is no reason why the amateur who possesses a little house in which to arrange his plants for the flowering period should not be able to produce as well-cultivated plants and flowers as those of anyone else. If he admires the huge flowers of the exhibition type, and is prepared to afford his plants the care and attention they require, he may obtain them.

Chrysanthemums may be cultivated for many purposes, and they are of different types. The varieties that bloom in August, September, and October in the open are generally termed

Border Chrysanthemums,

and these should be a feature of every cottage garden. They are capable of making the garden exceedingly attractive and bright when most other

flowers are losing their freshness ; and it would be difficult to imagine a prettier sight than they make in many a Surrey and Sussex cottage garden, where they are massed on either side of the doorway, or are trained on the low walls underneath the windows. The flowers are of great value also when cut for use in decorating the dwelling-rooms.

These varieties may be easily propagated by dividing the roots of plants already one or two years old, and by cuttings. The cuttings should be rooted in a cold frame, in pots or pans, merely protecting them from frost. The plants should be put out into the border or flower-garden in the month of April ; or, if the weather be bad, in May. Let the soil be made moderately rich with manures, and during the summer months sprinkle a good fertiliser round the plants, being careful to keep it off the foliage. This should be done immediately before rain if possible. Good varieties are Lady Fitzwigram, Market White, White Quintus, White Grunerwald, Madame Desgranges, Queen of the Earlies, which are all white ; Rycroft Glory, Soleil d'Octobre, Horace Martin, Mytchett Beauty, Sydney Peto, yellow ; Albert Rose, Madame Marie Masse, Mytchett Pink, O. J. Quintus, Edith Syrratt, Mrs. A. J. Parker, pink ; Rycroft Crimson, Roi des Précoces, Harvest Home, Crimson Marie Masse, Goacher's Crimson, Ruby King, red or crimson ; and Henry Yvon, Mrs. R. Mollinson, and Eva Williams, salmon and bronze colours.

Bush Plants in Pots.

The cultivation of *Chrysanthemums* in pots necessitates very much more work, caused mainly by the actual process of potting and re-potting the plants, and in affording water to the roots, which must be done very frequently, especially during hot weather. The simplest form of cultivation is that of training the plants as bushes, and these will yield a large number of flowers of moderate size, suitable for almost any purpose, excepting that of exhibition. In order to obtain good bushes the plants must be stopped occasionally during their growth, in order to induce them to make a greater number of shoots. Supposing the plant to be in an 8-in. pot, such a plant may have nine shoots, with a flower upon each shoot only, or left to flower quite naturally, without any thinning-out of the flower-buds, in which case the flowers will be small in size. Pinch the top from the plant when it is about six inches high, and of the shoots that form afterwards select three of the strongest and best placed, removing the others. These three shoots may be stopped when they are six or eight inches long, and of the subsequent growths three of the strongest on each shoot retained, removing the others as before. Most of the Japanese varieties may be grown upon this system.

The number of varieties that are suitable for cultivation as bush plants is very large, and any of the free-flowering varieties of any section may be included. Of the Japanese varieties choose those that are rather dwarf-growing and have a free habit, such as James Salter, Lady Selborne, R. Hooper Pearson, Col. W. B. Smith, Source d'Or, Elaine, Princess Victoria, L. Canning, Madame Gustave Henry, M. Chenon de Leché, Mrs. Winkley Smith, Mutual Friend, Red L. Canning, Soleil d'Octobre, Souvenir de Petite Amie, Vivian Morel, Charles Davis, Violet Lady Beaumont, W. R. Church, W. H. Lincoln, Wilfred H. Godfrey, and an exceedingly good and new yellow variety known as Allman's Yellow, etc.

The single-flowered varieties are the prettiest of any type of Chrysanthemum, and all cultivators should have a few of this section. They may be grown as bushes, and if cultivated well they will be exceedingly decorative objects when in flower.

Some of the Incurved varieties may be included and trained as bushes, and all the Pompons, and some of the Anemone flowered.

Chrysanthemums for Exhibition.

We cannot enter fully into the details connected with the culture of Chrysanthemums for exhibition. Those who have a desire to engage in competitive exhibitions will find that every new variety that is introduced needs to be studied, and the treatment afforded it must be modified to agree with its peculiar habits. One of the most important ends is that of so timing the flowering of each plant that the flowers may all be at their best on the date of the exhibition. For this purpose, and because varieties differ in their habits of growth, some need to be stopped early in the season and others do not; some must be permitted to develop the "crown" bud, others the "terminal," that is, the one last produced. In the case of new varieties the cultivator will find these particulars by experience, but a guide to the treatment of older sorts will be found in some of the catalogues issued by nurserymen who make these plants a speciality. We have said already that the Chrysanthemum may be grown for exhibition by all amateurs who possess a glasshouse in which to flower the plants. This is needful because the plants must be housed at the end of September, and the finest flowers will not develop until November. It is of no use to grow more plants than can be housed conveniently; crowding them together would result in weakening them, and spoiling the hopes of success.

The cuttings may be rooted in January and February (or even as late as April for plants that will be flowered in 7-in. and 8-in. pots), and a cold frame will do, providing that it is protected from frost by covering it with mats, etc. When rooted the young plants should be potted singly into 3-in. pots, and be moved again into 5-in. pots when the smaller ones have become full of roots. They must be kept in a frame or house until the end of April. The next shift will be one into the pots in which they will flower, and for the main batch this operation may be done at the middle or end of May. A good compost for Chrysanthemums should consist of rich, fibrous loam, leaf-mould, and sand; and, if possible, at the final potting mix with the compost a little dried cow manure, rubbed almost to a powder, and a sprinkling of some good chemical manure. No other feeding need be done until the month of August, when it will be necessary to "take," that is, to select, the flower-buds of most of the varieties. When this has been done, commence by using very weak liquid manure obtained from horse-droppings or the farmyard drainings, gradually increasing the strength, but never greatly so, or the effects will be disastrous. Let manures of any description err rather on the side of weakness than over-strength. It is painfully obvious, from the many specimens of plants received at the office of the *Gardeners' Chronicle*, that manures and insecticides are frequently used in so strong a condition as to cause irreparable injury.

In growing plants for affording exhibition blooms it is usual to encourage

three stems, and let each produce one flower (see Fig. 54). In the case of varieties that have to be stopped when a few inches high in order to get them to flower at the correct time, the three best shoots may be selected from the growths that follow; and in the case of other varieties, the three best shoots would be selected from the growths which appear after the first natural "break." When three have been selected, all other side shoots should be removed, and every effort made to grow these stems strongly, and under such conditions that the wood will become thoroughly matured. Some varieties succeed best upon the



Fig. 54.—Exhibition Chrysanthemum Miss Elsie Fulton.
Grown by Mr. T. Lunt. The flowers measured 11 inches by 11 inches.

"crown" and some upon the "terminal" bud, or bud that is last formed. As a general rule, it should be remembered that greater size is obtained from the "crown" bud and better colour from the "terminal" bud. In the case of the crown bud some varieties are large to coarseness; these should be grown on the terminal bud, for by so doing the flower will be smaller and of better colour, even if it still lack refinement.

As to the question of varieties, no two persons would be able to agree upon those that should be included, for instance, in the best selection of twenty-four. The intending cultivator would do well to visit a first-class

exhibition and take his notes there, allowing, as far as he is able, for the difference in the flowers caused by "dressing," a practice that we consider is carried to a degree that calls for condemnation.

Chrysanthemum Rust.

We fear that the appearance of the rust-like Fungus *Puccinia Hieracii* (see Fig. 55) is familiar to most who cultivate Chrysanthemums. We shall merely mention the best preventive means. Mr. Geo. Massee, to whom diseased specimens were sent by the Editor of the *Gardeners' Chronicle*, recommends that the plants should be sprayed at intervals during the time they are making their growth with a solution of Potassium Sulphide, made by dissolving one ounce of Potassium Sulphide (Liver of Sulphur) in a quart of hot water, afterwards making this up, by adding clear water, to 2½ gallons. Take care to remove plants that show the slightest trace of disease and keep them by themselves, or destroy them by burning, as may appear advisable. When plants are cut down in the winter, burn the stems and leaves immediately, for in these the fungus may be lurking in another stage.

It may be pointed out that this disease affects many hardy plants allied to the Chrysanthemum (i.e. *Compositæ*), especially the common Hawkweed. It is not well, therefore, if it can be avoided, to place the plants in summer near to other species belonging to this natural order.

GRAPE-VINES.

THE amateur has not always a house that he can devote exclusively to the cultivation of Vines, and although his task would be much easier were this the case, at the same time it is possible to grow good grapes in a lean-to house, where Vines and plants are associated. But it should be arranged, so far as circumstances will allow, that the plants selected to be grown in the Vinery be not especially subject to attacks from Mealy Bug, like *Eucharis* and *Stephanotis*, &c., because this is one of the worst insect pests, when once fairly established in the house itself, or on the rods of the Vine. January and February are good months for the planting of young canes. The border should be made after the following fashion :—

The first essential detail to consider is that of drainage. Unless the position and soil are such that no extra drainage is needed, it will be necessary to have a layer one foot deep of broken bricks, tiles, and suchlike material, putting the larger pieces at the bottom, and finishing off with the smallest. Then above this put a layer of turves cut three inches deep, placing them grass side downwards. Over this the border may be put, and if the situation be damp or low-lying, it will be well to have the border half its depth above the ground level, or even more. Three feet deep of border is sufficient in every case, and the situation should be considered, therefore, before putting in the drainage, as the depth of this should be determined by the height it is intended to have the surface of the border. If the border be made about three or four feet wide in the first season, this will be sufficient, and in a year or two

afterwards its width may be increased to six feet. If good turf can be got to make such a Vine border it is best; but some amateurs who may be unable to get this will have to use the 'best' garden soil they can

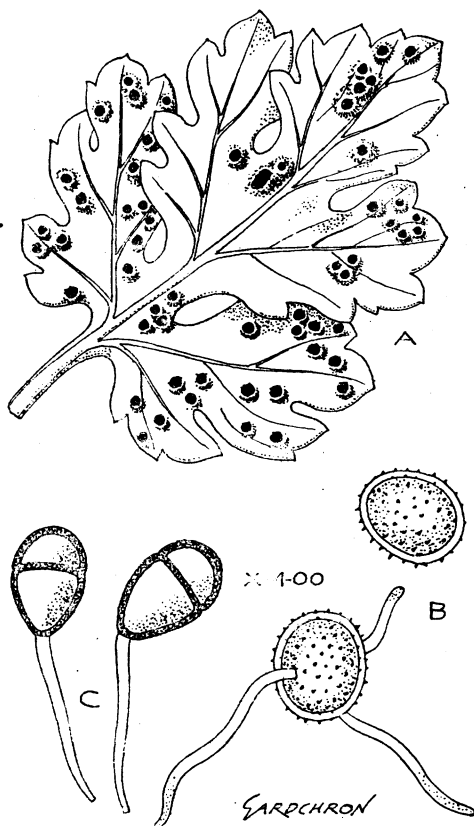


Fig. 55.—Chrysanthemum Rust, *Puccinia Hieracii*.

A—Leaf affected with "rust."

B—Uredo or summer-spores, one sprouting. Magn. 400 diam.

C—Puccinia-spores or winter spores, with their stalks. Magn. 400 diam.

command. The other ingredients necessary are horse droppings, lime rubble, wood ashes, and bones. Use equal quantities of these substances, and mix them thoroughly with five or even six times their bulk of

soil. Parings from horses' hoofs are useful for putting in new Vine borders, as they last for a considerable time before their nutritive qualities are expended. It must be determined by circumstances whether the Vines are planted inside or outside the house. If a great many plants have to be grown inside, and much watering done in consequence, plant the Vines just outside, and bring the canes through holes made near the ground level. In instances, however, where the house can be more or less given up to the Vines, plant them inside, but allow the roots to get outside also. The distances at which the canes should be planted will depend upon similar considerations, because the roof must not be wholly covered with Vines if plants (other than Ferns and similar species) are to be cultivated underneath their shade. Four feet apart will be the correct distance in a house devoted exclusively to Vines, but double that distance may not be more than necessary in a plant house. This detail, and others, must depend to a large extent upon circumstances. Obtain well-ripened canes, free from disease, and turn them out of their pots; shake away the greater part of the soil from them, cut back damaged roots, and plant so that the collar of the Vine rests just above the ground level. Spread out the roots evenly over the surface; then cover with soil, and press it firmly about the roots; finally filling in up to the level of the border.

Pruning.

When the canes have been planted, prune them back to three or four feet from the base. If these Vines be afforded but little heat, they will come into growth more or less naturally, and this is desirable in the case of canes that have been newly planted.

When the Vines commence to grow, every care should be taken of the top or leading bud, and the growth from this should be secured gently, to prevent it being injured. Disbudding will be necessary also along the canes, selecting good buds at distances of about two feet, to form side shoots, which will become "spurs." These side-shoots are stopped two leaves beyond the bunches of fruit. All the remaining buds must be rubbed off, and on no account should there be overcrowding of the shoots. In the following winter the main rod will need to be shortened by again leaving two or three feet of the current season's growth, if this is well-ripened, and the laterals should be cut back to one or, at most, two buds, which will form a spur. This operation should be repeated each season, until the Vine has filled its allotted space; after which the pruning will consist of cutting back to the spurs, and disbudding, to the rubbing off in spring of buds not required when two have been left on a spur at the winter pruning.

Thinning.

Removal of some of the berries should be commenced very soon after they have set and commenced to swell, and each bunch may be gone over several times at intervals of a few days, in preference to thinning them severely at one time. The object in thinning is to afford room for the remaining berries to swell to their natural size, without being crowded and made unshapely. Regard should be had to the general appearance of the bunch, but it will not pay the amateur to sacrifice weight of fruit to this end, except after careful consideration. In thinning, the operator must

bear in mind the size of berry of a particular variety ; leaving more space for berries of Gros Colmar, for instance, than for those of Black Alicante (see list of varieties on p. 92). Beyond this thinning it will be necessary to cut away some of the bunches when the crop is excessive, or the Vines may be permanently weakened.

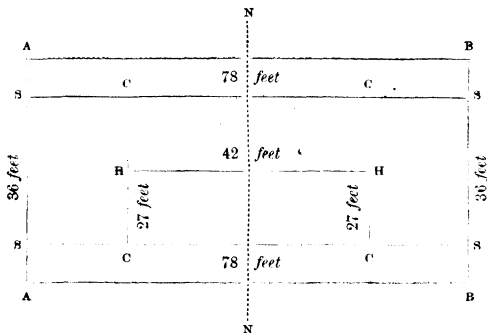
When the Grapes are swelling take every care to prevent the roots from becoming too dry, and afford occasional watering with liquid manure, or dust over the border a little good chemical manure, as Thomson's Vine Manure, and then water this in. A free circulation of air will be necessary when the Grapes commence to colour, and care must be taken that air is admitted sufficiently early in the mornings to prevent scorching. At this stage it will be better not to syringe the Vines ; but the surfaces in the house may be damped occasionally in order to supply moisture to the foliage. If the atmosphere be kept too dry, the leaves will be attacked by red spider, for which the leaves may be dusted over with sulphur.

THE DIMENSIONS OF A TENNIS COURT.

ENQUIRIES are so often addressed to the *Gardeners' Chronicle* respecting the correct dimensions of a Tennis Court, that it is considered that the details which follow may be of service to many amateurs.

In the first place, the site selected for such a court should be one that is as level as can be obtained, and this will make the work of making the surface perfectly level more or less a simple operation. This should be done in the autumn, commencing by cutting and removing the turf neatly, that it may be laid again when the irregularities have been removed, by the taking away of soil where the ground is higher than it should be, and filling in where it is low.

The following diagram will illustrate the amount of ground required, and the lines that are usually made and kept :—



The lines **A B** and **B A**, indicate a double court for three or four players
S S, S S, a single court for two players ; **A A** and **B B** are the base lines ;

C C and C C, service lines ; H H, half-court line ; N N, net. A court for the single game is twenty-seven feet wide, and seventy-eight feet long ; and for the double game, seventy-eight feet long and thirty-six feet wide. The posts for supporting the net should be placed three feet beyond the sides. The service lines run parallel to the net, and are twenty-one feet distant from the same. The net should be three feet high in the centre, and three feet six inches at the posts, which are put two or three feet outside the line, to allow of the net dropping.

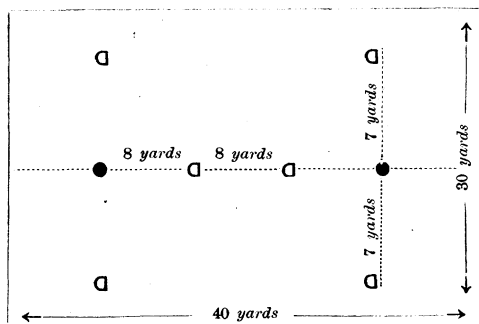
When the outside measurements have been taken, and a line drawn straightly and tightly ; it may be marked with the machine made for the purpose, or by the use of a whitewash brush, and a solution of whiting, lime, and water. The machine is better, because by its use it is easier to obtain perfectly straight and thin lines.

DIMENSIONS OF A CROQUET LAWN.

FOR the purpose of playing the game of Croquet, a well-rolled level grass-plat or lawn not less than thirty yards long by twenty yards wide is required.

A full-sized Croquet ground measures forty yards long by thirty yards wide.

The following diagram will show what is needed :—



In the line through the centre of the ground, eight yards from the boundary at either end, put the Croquet pegs, and at sixteen yards from either end a hoop. Let the corner hoops be placed in a line with the pegs, and seven yards from the pegs.

ON MANURES.

THE difficulty of getting manure is an excuse often made for bad gardening, whilst many substances of a most enriching and beneficial nature and easily to be procured are passed over.

In the first place, for strong soils, or for light sandy porous ones, the materials which will alter their texture and improve them should be first considered, and these are generally to be obtained if sought after. For strong soils the following will be found very suitable, rendering them easier to work, and the dung which had little or no effect before will then become doubly beneficial. Some of these substances may be mixed with the dung, as road-scrappings, sandy soil, ditch-bottoms, paring of hedge-banks, &c.

Drainage and continuous good cultivation render the use of manure *comparatively* unnecessary. But as some manure is in general beneficial it is as well to take into consideration what manure should be used and why. The manure to be used depends on the constitution of the soil. We should endeavour to supply what is wanting—thus, if the soil is deficient in nitrogenous matter, or in potash, in phosphates, or in lime, those substances should be added in the manure. But it will be asked, how is the amateur to know what is required? Through the agency of the Royal Horticultural Society he can get his soil analysed at little cost. A better plan is to take the advice of some experienced neighbour, and best of all, though it takes much longer, to test the matter by setting aside small plots of land of equal size, and growing the crops on them without any manure at all, or with nitrogenous, potassic, or phosphatic manure, alone or in combination, as the case may be.

These experimental plots should be utilised each year in order to see what the effect of differences in weather and season may be, for the manure that is comparatively useless in dry weather, may act well in a wet season and *vice versâ*. Again, the effect of the manure on particular plants or on particular parts of plants should be studied.

The Cabbage tribe require comparatively much nitrogenous manure; Potatos and Vines require abundance of potash; Turnips are fostered by the phosphates, and so on. Nitrogenous manures, such as dung, nitrate of soda, sulphate of ammonia, promote rapid and succulent leaf growth, but are not so suitable where rapid ripening of the tissues or of the flowers and seeds are required—here potassic manures, such as kainit and phosphatic manures may be preferable.

The manures sold by the merchants are generally good of their kind, and, for use on a small scale, they may be recommended, but their cost renders them prohibitive on a large scale, or where financial profit is looked for.

If the gardener knows what to ask for, he can obtain the substances required from the local druggists at a much cheaper rate and mix them for himself.

A useful general manure is the following :—

- 3 parts superphosphate of lime.
- 1 part of sulphate of potash.
- 1 part of nitrate of soda.

Four or five ounces of this mixture may be applied to each square yard in spring.

For pot plants a good general mixture is—

Phosphate of ammonia	...	...	...	25
Nitrate of ammonia	...	...	...	30
Nitrate of potash	...	...	...	45

100 parts.

Of this mixture half a tea-spoonful may be given to a plant in a 48-pot, and a larger quantity according to the size of the pot, always remembering that small quantities of the fertiliser rather than large amounts are preferable.

The mixed powder should be sprinkled on the soil and gently washed in with a fine-rosed water-pot. In two or three weeks' time or at longer intervals the dose may be repeated.

Road Scrapings from great thoroughfares, when gathered dry, or allowed to get dry in a heap before using it; no dressing equals this for strong land intended to grow Carrots and other roots.

Lime, when readily obtained, is exceedingly valuable in old gardens or where great quantities of animal and vegetable manures have been long used, sweetening the land, and rendering it lighter, and consequently fertile; but animal manure should not be added at the same time.

Oyster Shells pounded are excellent, being similar in their effects to lime, of which they are chiefly composed.

Sand, Burnt Clay, Ditch Cleanings, and any loose vegetable substances, will be found useful.

For very light or sandy soils the following will be found the best :—

Marl, or Clay, which has been previously mixed with dung. This will render the soil sticky, and prevent the manure being so soon washed down. For such soils, cow and pig dung are preferable, they being less readily washed away, keeping their moisture a considerably longer time than most other manures.

Many of the following substances are easily obtained, and are all of great service as manures :—

Night Soil.—This is a strong manure. It should be laid in alternate layers, with double its bulk of dry soil, mixing a little quicklime with each layer. By being turned either in winter or in dry weather, it soon becomes powdered, and may then be spread on the ground, or mixed with the composts for choice flowers, and if some is sown in the drills with Onions, its effects will be very conspicuous. This substance enters largely into the composition of many patent manures. At a very little trouble or expense most cottagers could adopt the dry earth system in their privies, and so provide themselves with a valuable manure, requiring no after-mixing to make it fit for use. Urine and house slops, the first-named diluted, are excellent for watering crops, &c., and should never be wasted.

Fowl Dung is powerful. It should be used in a fresh state, mixed with soil, and spread thinly. Pigeons' dung is similar, but should be used with caution, and it will make a good liquid manure.

Soot is another powerful manure, and its effect becomes almost immediately visible, if kept dry, and sown with the crops of Onions or Turnips. It is greatly disliked by insects.

Pure Dung, as that of horses, which is often gathered from public roads by cottagers, should always be mixed with a considerable quantity of soil or the parings of hedge-banks. These, by becoming impregnated with the ammonia from the dung, are equally valuable, besides increasing the bulk. Using the pure dung without doing this would in many cases produce disease; therefore always add a considerable portion of turfy soil to the dung-heap, and let it be well mixed together before spreading on the ground.

Manure Water will be found most useful if properly applied. For collecting this a tank or barrel should be sunk near the dung-heap, that the drainings of the latter may run into it. If sheep's dung be added, its strength will be increased; but it should only be administered *moderately, and in a much diluted state*, or the roots of tender plants may be destroyed by it. For out-door crops moist weather should be chosen for applying liquid manure. Where a cow or horse is kept, a channel should be made for their urine to run into this tank. The effects of this will be surprising, if administered to florists' flowers, prize Gooseberries, Fruit-trees, or indeed to any plants whose range of roots can be ascertained, and where robust growth is desirable. Manure water applied in the winter to any kind of fruit-trees which have long occupied the same land is very beneficial, and is especially useful in Grass orchards.

Bones and Horn.—These are both powerful and lasting substances when crushed. The former have been used unbroken in the soil for a Vine with wonderful effect. They decay and part with their fertilising ingredients so slowly, that they are very useful in the formation of Vine and Fig borders or composts required to last a long time. The parings of horses' hoofs are also valuable in the same way.

Fish.—In some counties these may be obtained in abundance, and are excellent as manure in any state, but are best when dug in while in the fresh state, or covered with soil and spread after a time.

Vegetables, as refuse Turnips, Cabbage, and other green crops, which can be readily dug in, should not be allowed to decompose first, but be used in a green state. They then commence a gradual decomposition, and become at once food for the succeeding crop.

Combined Animal and Chemical Manuring.—As a rule, the best results may be obtained by combining animal dung and chemical manures, rather than relying on either separately. For general kitchen garden crops the following combination is a good one, and should be dugged into the ground in autumn or early spring. To every 25 square yards afford $\frac{1}{2}$ of a load of farm-yard manure, $3\frac{1}{2}$ lbs. of superphosphate of lime, and $2\frac{1}{2}$ lbs. of kainit. Later in the season, when the crops are making rapid growth, $2\frac{1}{2}$ lbs. of nitrate of soda may be scattered on the surface of the ground in two or more dressings. Be careful that no chemical manure is ever allowed to fall on the foliage of plants.

GARDEN TOOLS.

THE cottager or amateur merely cultivating his garden for ordinary vegetable crops will require little beyond a good Spade, Fork, Rake, and Hoe. The subjoined list will furnish a guide to those whose means allow of more extended operations, both as to selection and probable cost of the best of each kind, those most necessary being first specified.

Spades.—The best of these is No. 3; there are several sizes, larger and smaller, but this will be found most useful for general purposes. The blade being solid, is much stronger and less liable to break in heavy work. These range in price from 3*s.* to 5*s.* each. Shovels of the same make may be had at much the same prices.

Forks.—These are of several forms. The best and most general in use is the 5-tined cast steel; these may be used for lifting root crops, and are especially useful for turning ground deeply, as they leave the soil more open to the influence of the weather than the Spade. Price 3*s.* to 5*s.* Small 3-tined forks for borders, &c., cost from 1*s.* to 2*s.* 6*d.* each.

Rakes.—These may be had from six to twenty inches wide; for ordinary raking in seeds, &c., those twelve to fourteen inches are most suitable; for flower borders a smaller size is best. The tines of these are one, to one and a half inches apart, and cost 2*d.* to 2½*d.* per tine; a twelve-inch rake costs 1*s.* 9*d.* to 2*s.* 3*d.*, exclusive of the shaft, which is 4*d.* to 6*d.* additional.

Hoes.—Of these the Dutch or thrust-hoe is probably one of the most useful tools for working between young seed crops, and for cutting up weeds generally. Those of six to seven inches wide are the most suitable size for general purposes, and cost about 3*d.* per inch. Moulding hoes are of various widths, light or heavy, and range from 1*s.* to 2*s.* each.

Shears.—For cutting hedges, box edgings, &c., these are necessary in most gardens where any pretension to neatness is kept up. These are of various sizes, and cost from 3*s.* 6*d.* to 6*s.* 6*d.* per pair. Pruning Shears are also useful where many fruit-trees are grown, for stopping or thinning the branches. Price 3*s.* to 4*s.* 6*d.* per pair, according to size and strength.

Hand-Saws.—Small hand-saws for pruning are 1*s.* 6*d.* to 3*s.* each; larger, for general purposes, 3*s.* 6*d.* to 7*s.* 6*d.* each.

Reel and Line.—The reel is most convenient and durable; made of iron, price 1*s.* 6*d.* to 3*s.* each. The patent twist line is the best for durability. This should be well strained to its full length for a few hours before using for the first time, as it will not so readily curl or "kink" afterwards. Price 1*s.* to 1*s.* 6*d.* per thirty yards.

Dibbles.—Iron shod, 9*d.* to 1*s.* 6*d.* each.

Trowels.—Useful for flower borders, or for transplanting young vegetable crops, 1*s.* to 1*s.* 9*d.* each.

Watering Pots.—These are made of various materials, but for general purposes those made of galvanized sheet iron are the most durable. The rose should be movable; price of three-gallon pot, 5*s.* to 6*s.* Smaller sizes for watering plants in pots are made of stout tin, and

range from 2*s.* to 2*s.* 6*d.* per gallon. Haw's patent watering cans will be found convenient for watering plants in houses.

Knives.—For pruning, Saynor's buckhorn handles. Price 2*s.* to 3*s.* each. Budding Knives, 1*s.* 6*d.* to 3*s.* each.

Hammer, two-clawed, for nailing, 1*s.* 6*d.* to 3*s.* each.

Nails, cast, for wall trees, 3*d.* to 4*d.* per pound.

Gloves.—Tanned leather, for pruning, 2*s.* to 2*s.* 6*d.* per pair.

Hand Bills or **Bill Hooks**, for laying or cleaning hedges, faggotting wood, &c., 2*s.* to 3*s.* 6*d.* each.

Scythe for lawn mowing, blade and handle complete, 5*s.* 6*d.*

Lawn Mowing Machine.—Of these there are a great variety. They may be purchased from 21*s.* upwards, but the very low priced are not ultimately the cheapest, as they are liable to soon get out of order, and the cost of repairs will probably in a few seasons amount to more than the first cost of a good one.

INSECT PESTS.

SOME of the more common insect pests and the best methods of dealing with them are referred to below. As preventive measures, good cultivation and thorough cleanliness and tidiness are most important.

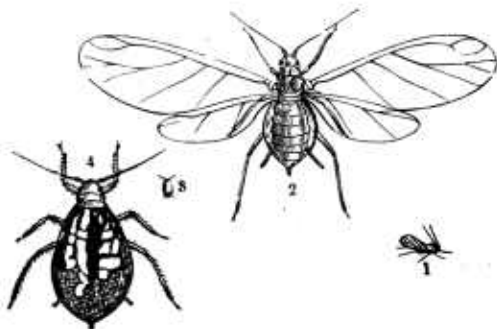


Fig. 56.—1 and 3 **Aphides**, or **Plant Lice**, real size;
2 and 4 magnified.

As remedies, which act by killing the insect, many may be mentioned :—Sulphur used in powder, or mixed with powdered lime and water, and used with a syringe ; petroleum, 2 oz. to a gallon of hot soap-suds, kept well stirred and applied with a syringe ; Tobacco-water, made by steeping 1 oz. of strong tobacco in a quart of water ; Quassia-water, made by boiling a handful of Quassia chips in half a gallon of water. On a small scale, Keating's Insect Powder is very effectnal in some cases. Paris

Green and London Purple are excellent in their way, used in solution as a spray for fruit-trees, before the fruit is set, but they are so poisonous that they are much too dangerous for common use. In all cases encourage rooks, starlings, tits, and insect-eating birds.

Aphides.—The perfect insect is usually greenish, and is well known as "green-fly." There are many kinds affecting different plants, the Bean Aphis, for instance, is black; so is that which attacks the Cherry and Plum. Syringe with soap-suds, petroleum emulsion, Tobacco-water, or Quassia decoction. For pot-plants, dusting with insect-powder (*Pyrethrum*) is useful. The Woolly Aphis, or *American Blight*, attacking Apple-trees, is a similar insect, which shrouds itself in a white cottony covering. Petroleum emulsion (p. 123) is a useful remedy, but if badly attacked it is better to cut off the affected parts and burn them.

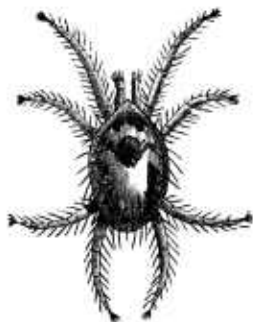


Fig. 57.—Red Spider, magnified.

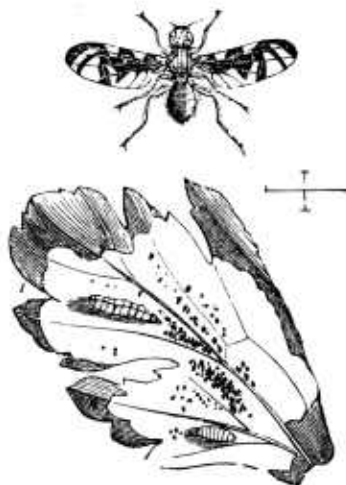


Fig. 58.—The Celery Fly.

Showing the Grub in the Leaf, and the Perfect Fly.

Red Spider spins a web over the leaves, and deposits its eggs in the web. Red Spider is particularly troublesome in dry weather, and on the bark of fruit-trees or the young shoots of Gooseberries, and on Cucumbers, Vines, &c. Syringing with petroleum emulsion is useful in cases where the leaves of the plant affected are not of delicate texture.

The Celery Fly.—The leaves of Celery may often be seen with whitish patches. These are caused by the maggot of a fly which eats away the substance of the leaf, leaving only the skin. Destroy the affected leaves and syringe the plants with Quassia extract. Chrysanthemums and Marguerites are attacked by a similar insect (see p. 134).

The Onion Fly.—The eggs are deposited on the leaf. The maggot bores through the leaf, feeds on the bulbs, and turns into a chrysalis, which is in the ground near to the bulb, or actually in the bulb, all the winter. Destroy the bulbs immediately they are seen to be affected. Do not throw the bulbs on the rubbish heap, but, as far as possible, burn them. Apply gas-lime to the soil in winter or spring.

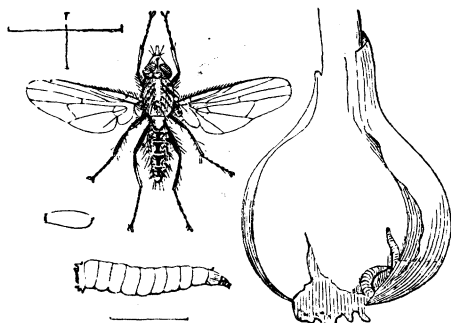


Fig. 59.—Onion Fly and Grub.

The lines show the size of the Grub and the Fly.

The Lettuce Fly.—A dark brown fly which deposits its eggs in the flower heads. The maggots eat the seed of the Lettuce. They should be destroyed whenever seen.

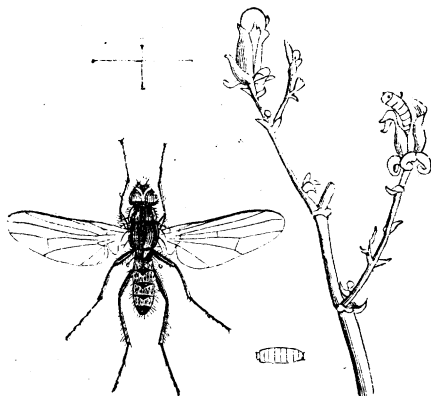


Fig. 60.—Lettuce Fly and Grub.

Gooseberry Saw Fly.—The chrysalids are on or just beneath the surface soil beneath the bushes. This layer should be removed to a distance. Destroy all caterpillars that can be found, and dust the bushes with Hellebore powder.

The Raspberry Miner burrows in the leaves in the same way that the maggot of the Celery fly does. Pick off the leaves and burn them.

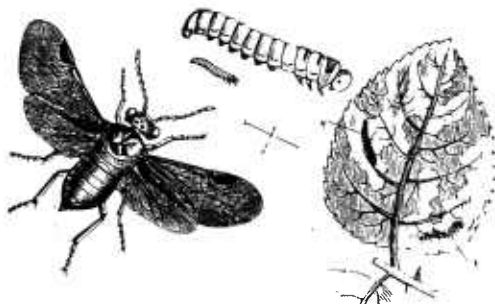


Fig. 61.—Raspberry-leaf Miner.

The Magpie Moth, is so called from the black and white markings on the wing. The caterpillar is a "looper," and very destructive to Gooseberries and Currants. Pick them off and destroy them. Dust the bushes with Hellebore powder.



Fig. 62.—Magpie Moth and Caterpillar found on the Gooseberry and Currant.

The Crane Fly or Daddy Long-Legs.—The maggots are very destructive to the roots of Grasses. Roll the lawns firmly, cultivate well and encourage rooks and starlings. Apply gas-lime in the winter.

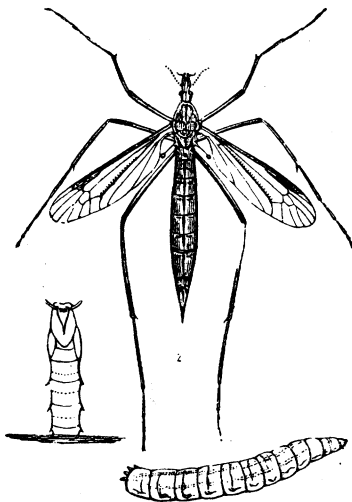


Fig. 63.—The Crane Fly, or Daddy Long-Legs.

1 Grub, and 2 Mature Insect.

The Winter Moth is destructive to fruit-trees. The caterpillars or grubs are hatched from the eggs in spring. These grubs form a loop when walking, and feed on the leaves. In summer the grubs bury themselves in the surface soil and assume the stage of a chrysalis.

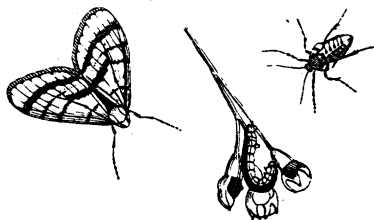


Fig. 64.—The Winter Moth.

To the right the wingless egg-laying moth ; to the left the male.
The looped caterpillar is shown on the bud.

In late autumn or early winter the moths emerge from the chrysalis. The female moth has no wings, but creeps up the stem and deposits her eggs upon it. Hence the way to prevent mischief is to smear a broad band of brown paper with a mixture of tar and coarse grease, and wrap this band round the stem. The insects in their passage up the stem are caught by the grease-band. The winged moth lays no eggs, and is consequently harmless.

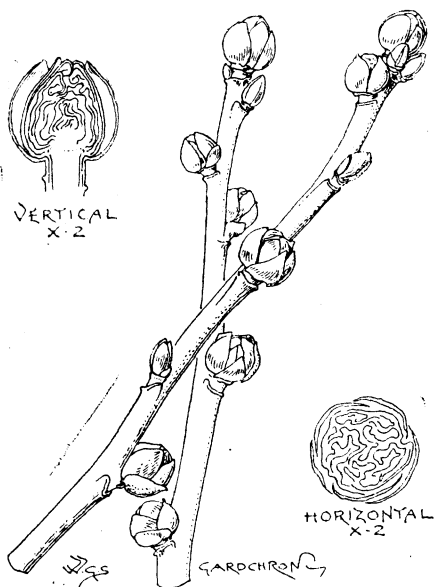


Fig. 65.—Twigs of Black Currant bush affected with the Bud-mite; also vertical and horizontal sections of one of the swollen buds.

Currant-bud Mite.—This is a pest that for some years past has done immense harm to Black Currant bushes, especially in market gardens. Its presence may be known by the buds becoming swollen in the winter season to twice their natural size. When this condition is noticed, the best practice is to take away and burn the bushes badly affected, cut the affected shoots from those remaining and rake away the surface soil from about the bushes, so far as can be done without damaging the roots, then top-dress with fresh soil. The variety Boskoop Giant is recommended as being less liable to attack. The Hazel and Filbert are attacked by a similar mite.

Wire Worms and Millipedes.—Wire Worms are the small rigid, thread-like grubs of a beetle. Millipedes belong to quite a different class, but have a somewhat similar appearance, though possessing numerous feet (Fig. 66). Wire Worms and Millipedes are most destructive. The application of gas-lime to the soil is useful. On a smaller scale they may be trapped with slices of Potato or Carrot, and destroyed. Rooks and starlings are very fond of these delicacies.

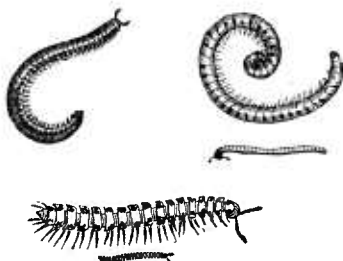


Fig. 66.—Millipedes.

Weevils are beetles with a long pointed snout. Their fat cream-coloured grubs are extremely destructive. Gas-lime dressings are useful preventives. On a small scale the insects may be trapped by slices of Carrot or Potato, and destroyed. They should be hunted for at night when they are feeding. They are very destructive in vine borders.

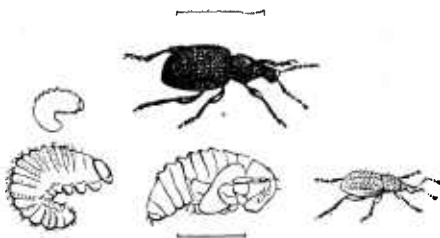


Fig. 67.—Black and Clay-coloured Weevils and their Grubs.

Cock Chafers and Chafer Beetles.—The Chafer Beetles feed on the young leaves of trees. The eggs are laid in the ground. The grubs when hatched feed on the roots; ultimately they turn into chrysalids, from which, in the fourth summer after hatching, they emerge as beetles.

Knock the beetles down and let the ducks or fowls eat them. A dressing of gas-lime is a good preventive.

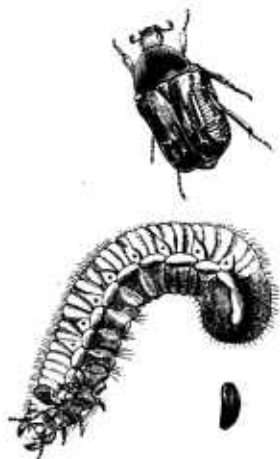


Fig. 68.—Green Chafer of the Rose.

Thrips.—Every gardener knows how troublesome the Thrips are, especially to such plants as *Azalea indica*, from the leaves of which they draw away the juices by their sucker-like jaw. They can be destroyed

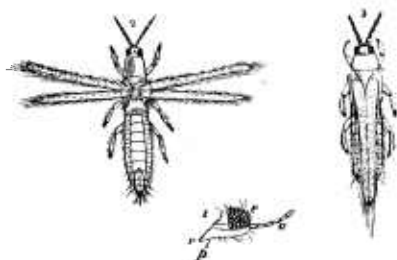


Fig. 69.—Thrips.

- (1) Head of insect in profile; *a*, antennæ; *e*, a compound eye; *r*, the beak; *p*, one of the four feelers; 2 and 3 are highly magnified, showing the wings expanded and closed.

by repeated fumigations, or by syringing the plants with a solution of soft soap and paraffin, in the proportions of two ounces of soft soap, four ounces of paraffin, and two gallons of water. This fluid must be kept

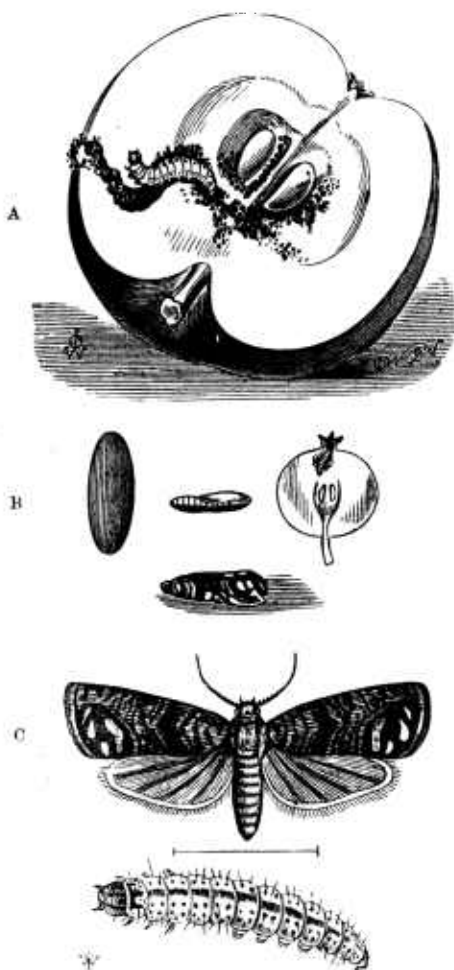


Fig. 70.—The Codlin Moth.

A—The caterpillar in an apple, natural size.

B—The chrysalis stage.

C—The perfect moth, magnified. Beneath, the caterpillar magnified.

constantly stirred during its application, or the paraffin will remain at the surface. Frequent syringings with clean water are excellent preventives of Thrips.

The Codlin Moth.—This insect (*Carpocapsa pomonella*) (Fig. 70) is the cause of "worm-eaten" Apples, which fall from the tree just before they should ripen, and which on examination will be found to have a small hole in the centre of a discoloured spot. The caterpillar is about half an inch long, and lays one egg in the eye of each fruit, when the

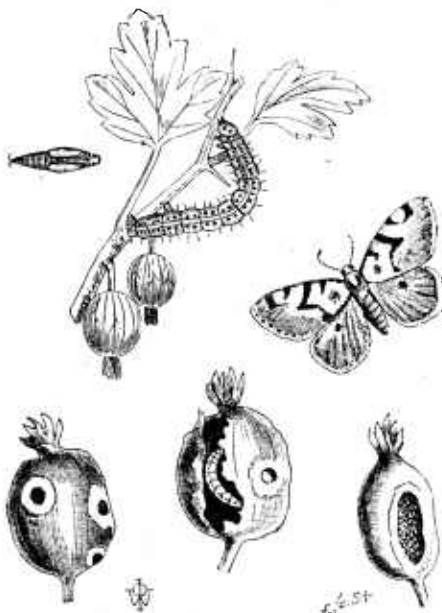


Fig. 71.—The Gooseberry Borer.

fruits are beginning to form. The caterpillars having thus fallen from the tree in the fruits, eventually climb up the stem, and in some sheltered position in the bark change into the chrysalis stage, from which the moths emerge later. Preventive methods include the putting of obstacles around the stems to prevent the caterpillars from climbing into the trees, the gathering of all attacked fruits directly they fall and before the caterpillars have escaped, and the spraying of trees directly the blossoms have fallen in spring,

The spray may be prepared by mixing from one half to a pound of Paris green in one hundred and forty gallons of water. This *virulent poison* must be kept stirred constantly during its application. The spraying should be repeated on two future occasions, at intervals of ten days, but should be avoided before the fruit shows signs of ripening.

The Gooseberry Borer.—The caterpillars of this moth (*Halia vanaria*) are very destructive to Gooseberries, eating into the berries whilst they are growing and causing them to fall to the ground before they are ripe. It might be found useful to spray the bushes with a liquid containing quassia and soft soap, before the flowers set and after the fruit has been gathered, with a view to rendering them distasteful to the female moth and so prevent her from laying her eggs thereon.

A Leaf Miner.—The Miner shown in Fig. 72 attacks various species of plants belonging to the order *Compositæ*, such as Marguerites, Chrysanthemums, &c. The common white- and yellow-flowered Marguerites (*Chrysanthemum frutescens*) are particularly subject to its attacks, and unless measures are taken to prevent its spread the plants are reduced to a very shabby appearance. The perfect insect is shown (magnified) in the illustration. The female punctures the leaves and deposits her eggs in the interior. Directly the young caterpillars are hatched they commence to feed upon the leaves, and tunnel about between the two surfaces in their quest. Subsequently the caterpillar becomes a chrysalis, and eventually the perfect insect emerges from the chrysalis, thus completing the cycle. Preventive measures would include the spraying of the plants with quassia extract, or other distasteful liquid, in order to prevent the females from depositing their eggs upon the leaves. When plants have been so sprayed at intervals it has been found to be very effective. Remove badly affected leaves and burn them. See also pp. 124, 126.

The Pear-tree Slug-worm.—This is a very grievous pest upon Pear-trees in summer, when the Slug-worms feed upon the upper surface of the leaves. Less frequently, they are injurious in the same manner to Cherry-trees. The perfect insect (Saw-fly) appears early in the summer, and the eggs deposited by the female on the upper-side of the leaves hatch in a few days. The larva is of bottle-green colour and of the peculiar shape shown in the illustrations (Fig. 73). After feeding for a few weeks upon the leaves the Slug-worms become caterpillars and then go down into the soil around the trees, from which they emerge again as Saw-flies, similar to the one shown in the illustration. The Slug-worms are covered with a thick slime. If quicklime or gas-lime be dusted over them they are able to throw it off by exuding from their skins another coating of slime, and shedding as it were the injurious matter. But they are not able to repeat the process many times, except a considerable interval be allowed between the dressings, and it is this fact that affords the gardener an opportunity of destroying them by such means. If the lime be dusted over the trees in such a manner that it will reach the Slug-worms, and the process be repeated very soon afterwards, the second dressing will kill them. Other good methods of destroying the pests include syringing the trees thoroughly with soap-suds, tobacco-water, or lime-water, using a peck of lime in about thirty



Fig. 72.—A Leaf Miner in Marguerite.
Showing an affected leaf, chrysalis, and perfect insect.

gallons of water. Remembering also that the caterpillars go into the ground, it will be useful to remove the surface soil in the autumn three inches deep, burn it, and top dress with fresh materials.

Eelworms.—These are very small Nematode worms, that are very injurious to the roots of plants. They cannot be distinguished without the aid of a magnifying glass. When Tomato or Cucumber plants fail to thrive, and there is no apparent reason for this, it will be well to examine the roots, to see if there are any wart-like excrescences upon them. If there are, they will denote the presence of Eelworms. There is no satisfactory cure for such attacks, but in the case of pot-plants they may be prevented by sterilising the soil before using it. This can be done by heating it sufficiently over the stokehole boiler, to kill all animal life it may contain. Eelworms attack numerous species of plants, and are most destructive.

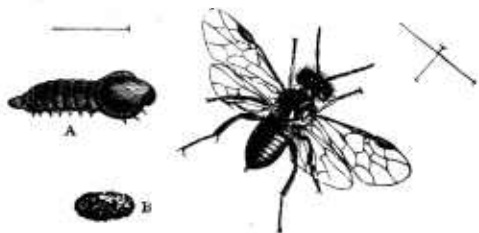


Fig. 73.—The Pear Slug-worm and Cherry Sawfly (*Selandria atra*) p. 133.

A—Maggot. B—Chrysalis.

FUNGOUS ATTACKS.

THE practices of the gardener, and especially the growing of large quantities of the same plant in a limited area, often afford excellent opportunities for the spread and development of various fungus pests. Some of these, like the Vine and Peach mildew, are superficial and grow only on the surface of the leaves where they are easily reached by powdered sulphur, or by solutions of liver of sulphur, half ounce to the gallon, used in the form of spray. Others are more deeply seated and cannot be reached by outward applications, but their spread and development may nevertheless be checked by spraying with Bordeaux Mixture, as mentioned in the next paragraph. Fungi are often introduced with the manure that is used, so that great vigilance is required, and when fungus is seen it is best not to wait, but to at once destroy the plant by fire wherever it is possible. Free ventilation, rather than a stuffy moist air, is desirable whenever it can be safely afforded. As in the case of insect visitations, absolute cleanliness of the house, stages, pots, &c., is essential.

For the Potato disease proper, one of two special plans is recommended—high moulding or the use of Bordeaux Mixture. The first

is the best for cottagers' use. Twice or three times in the season, at intervals of a fortnight, draw up the earth to the haulm and pat it down firmly with a spade, so that a ridge is formed (see p. 53). Then carefully bend over they to one side (remembering that they are very brittle), so that the tops point towards the alleys between the rows. This plan is very simple and very effective, especially in small gardens where a large proportion of the crop may be saved by its adoption. Bordeaux Mixture is troublesome for a cottager to use, but it is very serviceable in checking and diminishing the effects of the disease. It is made by dissolving in a large wooden or earthenware tub 2 lb. of sulphate of copper (blue vitriol) in two gallons of hot water. Then put 2 lb. of freshly slaked lime into another tub with two gallons of water, so that a creamy fluid is made. Then pour the lime solution into the copper solution and stir well. Add twenty gallons of water and continue to stir. The mixture (which should be of a blue colour) is applied with a syringe or a special form of spraying machine. It should be applied all over the leaves and to the under surface as well as the upper. Two



Fig. 74.—Canker on Apple-Tree. Cracks in the bark with the red fungus-capsules, or perithecia. Half natural size.

applications after midsummer are usually sufficient. It should be remembered that the application is not a cure but a preventive. Take care, as far as possible, to destroy by fire all diseased haulm and tubers. By leaving the diseased haulms on the ground, throwing them on the rubbish-heap, or by feeding the pigs with them, you are simply adopting the best means to promote the outbreak of the disease in the next season. Impress this fact on your neighbours also.

Canker in Apple and other fruit-trees generally occurs when the tree is subjected to frost, undrained soil, wounds, or other unwholesome conditions, which allow the fungus (*Nectria*) to obtain a lodgment. The best thing to do is to replant the tree under better conditions, but where this is not practicable cut away the affected portions, burn them and cover the wounds with tar.

Club in Cabbage and allied plants (see p. 51) is due to one of two causes—a beetle, or, what is more common, to a slime fungus (Fig. 25). The Hollyhock, Cucumber, Tomato, and Chrysanthemum funguses are mentioned under those headings.

ON AMATEURS' AND COTTAGERS' SHOWS.

THE rapid advance of gardening pursuits during the last few years has had a marked effect in the improved growth and general management of the gardens of the labouring classes in country districts. Some of this advance is undoubtedly due to the establishment of Horticultural Societies in the more populous parishes or districts, and the increase in the number of allotment holders will have a still further effect in the same direction, aided, as this increase is, by the plan advocated for so many years by the *Gardeners' Chronicle*, but not acted on till the various County Councils provided travelling lecturers on gardening, fruit-growing, bee-keeping, poultry rearing, and cognate subjects, who deliver lectures and demonstrations in the towns and villages. A few short practical hints may be productive of some good in this way. First, with regard to flowers, where prizes are offered for cut flowers, as Roses, Dahlias, Asters, Hollyhocks, Chrysanthemums, and Sweet Peas, &c., in separate classes, these are too often seen crowded up together, without much attempt at arrangement, or providing any means for keeping the flowers in a fresh state. It cannot be expected that the cottage exhibitor can provide expensive stands or tubes for his flowers; but he may use simple means at his command, such, for instance, as a plate or dish in which an inch-deep layer of damp sand has been placed; this neatly covered with green moss, and the stalks inserted, will show the flowers to advantage and keep them fresh.

The term bouquet or nosegay is also frequently misunderstood. This, it should be borne in mind, is intended to be carried in the hand, and therefore should not be large or crowded. A few simple flowers and Fern fronds of some of the smaller hardy kinds lightly mixed in will, with good arrangement as to colour, frequently justly take precedence of more choice or rare flowers badly arranged. Devices or

designs are also occasionally represented by baskets or dishes of flowers, and in some cases mere bundles of flowers are exhibited. We think that lecturers should illustrate to their audiences the uses of bouquet wire of various sizes, of cotton wool and fine moss, in the making of bouquets. Without wire it is almost impossible to give a graceful appearance to a nosegay; and its use need not render a nosegay short-lived, as it is possible to use it in conjunction with the stalks of the flowers.

In preparing vegetables for exhibition, all useless or decayed leaves should be removed. Roots, such as Potatoes, Carrots, &c., should be carefully washed, and in all kinds it should be borne in mind that evenness of size and shape and an equal state of ripeness are needful for success. The principal object of the exhibitor should be to show a few good vegetables rather than a large number of inferior quality. A strict adherence to the numbers or quantities and other directions in the Prize List should also be attended to, as the Judges will be obliged to pass over the best production of its class if the rules have not been complied with.

ON THE CULTIVATION OF FLOWERS IN WINDOWS.

A FEW simple rules for the management of flowers in room windows may be added.

The first thing to be attended to is to get proper plants for the purpose, as there are many which would defy the skill of the most experienced gardener to keep any length of time in health in such situations; therefore a list is given of plants the most fitted for the purpose, being easily obtainable and not difficult to grow. The principal things requiring consideration are cleanliness, air, light, a suitable soil, moisture, and, when grown outside, shelter from draughts or storms.

Plants kept in windows naturally bend their branches and leaves towards the light, and thereby become one-sided; and it is wrong to try to make them otherwise by frequently turning them, as the plants will as constantly turn their growth to follow the light, which not only weakens them, but spoils their appearance. For plants receiving no top light it is best to spread them out, forming one good show of healthy foliage to face the window; well-balanced heads under such circumstances being almost out of the question. Place them within a few inches of the glass; of course windows having a south aspect possess the greatest advantage.

Watering.—Careful watering of plants in rooms is perhaps the most important feature in their management, and it is unfortunately in most cases ill understood, water being too often given at stated times, whether required by the plants or not, from a too eager desire for their welfare. In summer this excess of water cannot be so easily given unless the plants are allowed to stand in saucers constantly filled with water, which, by overloading them with sap, will soon cause soft sickly growths. An exception to this rule is in the case of the growths of annuals in pots during summer; they, if well drained, may stand in feeders, but these;

whenever used, should be half filled with fine gravel or sand, which may be kept moist or wet according to circumstances.

The best and only general rules that can be followed are : in winter to keep plants not then growing rather dry ; in spring to increase the quantity as they grow and as the sun's power increases, keeping them in a medium state of moisture ; in summer to apply water daily, and in autumn to afford less as the days shorten, letting the plants go gradually to rest until the dry state of winter is again reached.

As regards air, similar rules to those given for watering may be followed. In winter, when the plants are not growing, large supplies of air are not so important, enough being usually given by the room-doo-. As spring advances increase the quantity, carefully guarding against the cold mornings and evenings, or cutting winds ; and if the plants are placed out in the middle of fine days, take care to bring them in before the chill of evening comes on. After the first or second week in May they may be set outside for the summer, and towards the end of September, or as soon as heavy cold rains occur, they should be placed again in their quarters for the winter, setting them out of doors when fine, or supplying them with plenty of air by the window, until the cold weather and lesser quantity of moisture at their roots bring them to a state of comparative rest. It should be remembered in spring and autumn that the plants must not go out to-day because they were placed out yesterday, but the weather alone must determine whether they should be put out or not ; sudden changes must at all times be avoided. The leaves of plants, as has been pointed out, act as lungs, and as food-absorbers also ; if they become dirty their breathing is choked ; therefore an occasional careful sponging will be useful to them. In spring and summer allow them the full benefit of genial showers, which will do them more good than any artificial watering. Never use spring-water if soft or rain-water can be had ; and always let it be about the same heat as the air in which the plants are growing. It should hardly be necessary to mention the necessity for removing faded leaves and flowers : the flowers become weaker as they commence to produce seeds, and, whether or not, they have an untidy appearance.

Care is required to stop some plants at proper times to induce bushy growth, and increase the number of the flowers.

Potting.—One principal potting is usually required just as the plant is about to commence to grow, and afterwards as often as the plants may fill their pots with roots or seem to require it up to June. The most important thing is a good soil. Most plants will thrive in a soil composed of three parts loam of a fibrous, open texture with one-fourth rotted dung or leaf-mould, if well potted and plenty of drainage afforded by means of crocks, with siftings of soil, moss, and half-decayed tree leaves over these, so as to allow the water to pass away readily. Few of the plants mentioned below require very firm potting, slight pressure with the fingers being sufficient. Never suffer the surface-soil in the pots to become hard or moss-grown, but let it be loosened occasionally with a pointed stick.

In towns where suitable soil is difficult to obtain, "Jadoo fibre" is a good material for pot-plants.

Although a long list of suitable plants might be given, we would not advise too many to be attempted, as nothing looks worse than a great number of crowded, unhappy-looking plants, which must be the case

if too many are grown. The turf-built pit recommended for Cucumbers, p. 28, will in a great measure relieve the windows, enabling many to be grown through the winter which should only be placed in the window when in flower. The whole of those mentioned for spring are of this class.

Succulents or Cactus-like plants are well suited for growing in rooms, as they are not so impatient of either air or lack of water as most other plants; and the abundance of their beautiful flowers renders them objects of interest. Cactus in variety, Mesembryanthemums, and flowering Aloes deserve special notice.

Green-fly is apt to infest the young shoots or under sides of the leaves of window plants; to destroy them, moisten the infested parts and dust with tobacco-powder, or brush them off as soon as seen with a feather, or dip them in tobacco-water. Fumigation with tobacco will also destroy them.

FLOWERS, &c., IN POTS.

For Spring.

Auriculas,	The Czar,	Hyacinths,	Musk,
Cyclamens,	Neapolitan, &	Cinerarias,	Tulips,
Snowdrops,	Victoria Violets,	Sedums,	Primulas,
Russian Violets,	Early Tulips,	Pelargoniums,	Polyanthus,
Narcissus,	Crocus,	Pansies,	Saxifrages.
		Mignonette,	

For Summer.

Calla (Richardia africana [æthiopica], known as Lily of the Nile, or Arum Lily),	Campanula iso- phylla,	Double and Single Wall- flowers,	Cactus,
Francoa race- mosa (Bridal Wreath),	Coronilla glauca,	Pinks,	Aloes,
Begonia Weltoni- ensis,	Acacia lophan- tha,	Carnations,	Myrtles,
	Phyllocactus,	Annuals, as	Heliotropes.
	hybrids,	Nemophila,	Vallota purpu- rea,
	Pelargoniums,	Schizanthus,	Sibthorpia
	Mignonette,	Balsams, Col- linsia, &c.,	europa, Dielytra spec- tabilis.
	10-week Stocks,		
	China Roses,		

For Autumn.

Pelargoniums,	Salvias,	Fuchsias,
Lobelias,	Hydrangeas,	Petunias,
Campanulas,	Verbenas,	Calceolarias.

For Winter.

Chrysanthemums,	Heliotropes,	Aloes,	Ivy,
Pelargoniums,	Myrtles,	Cactus,	Euonymus, &c.

WINDOW-BOXES.

THIS is a form of gardening in which almost everyone may indulge, and those who have little or no garden or glasshouses may still have their windows bright by obtaining suitable boxes, that may be made secure on the ledges outside. Having got suitable boxes, the next item needing attention is that of securing proper drainage. For this reason it is better that the bottom of the box be raised half-an-inch from the ledge, by means of supports at the corners. There should be sufficient holes in the boxes to allow the water to escape easily, and each may be covered with a large piece of broken pot to prevent it becoming choked with fine soil. Afterwards put a thin layer of broken crocks (pieces of flower-pot) over the bottom of the box, and cover them with some fibrous pieces of turf or similar material before filling in the soil. We have not space here to describe the exact nature of the soil necessary for every plant that may be grown in a window-box. But for the greater number of such plants the compost should be as follows: two parts fibrous loam and one part leaf-mould, with a good proportion of silver sand, which will keep it porous. A *very little* chemical manure may be mixed with the soil, such as Clay's Fertiliser, or Thomson's Vine and Plant Manure; but be very careful not to use it in greater quantity than the makers recommend, or the result may be less satisfactory than if none was used. Such a compost might be modified to suit hard-wooded plants having very fine fibrous roots by adding to it a little pulled peat. All of these ingredients will be obtainable from the local nurseryman.

The choice of plants for such window-boxes would vary in most cases, because a very great variety may be chosen. In place of giving a general list here, we will indicate a few that are suitable for the different seasons, and the reader will be able to add others that he knows to be of similar character. Whether he is able to raise his plants for this purpose, or whether he must purchase them, will depend upon what means he has for their cultivation. In many cases, in London and other large towns, an amateur's garden consists of his window-boxes alone.

For the summer display the plants should be put into the boxes at the end of May, and a choice may be made between Pelargoniums, Zonal and Ivy-leaved varieties; Fuchsias, White and Yellow-flowered Marguerites, Marigolds, Begonias, Heliotropes, Petunias, Celosias, Calceolarias, &c. Such plants will require to be watered frequently during the summer months, and kept neat by taking away decayed leaves and flowers. Occasionally a little Clay's Fertiliser or Standen's Manure may be put into the water.

In October the plants will cease to be decorative, and if there is a glass-house they should be taken there and propagated for use in the following season. For effect, during the winter, plant the boxes with dwarf shrubs, including some with berries, as *Skimmia japonica*, *Aucuba vera*, &c.; and between them plant bulbs of Daffodils, Tulips, or Hyacinths, and *Iris reticulata*, which, coming into flower in early spring, will brighten the boxes until the summer occupants can be again put out.

PLANTS FOR DWELLING-ROOMS.

IN addition to the species already recommended for cultivation in windows, a few may be added that are especially suitable for the decoration of dwelling-rooms, and may be cultivated in them, providing there is not a glasshouse. Such are *Aspidistra lurida variegata*; Ferns, like *Pteris cretica*, *P. serrulata*, *Pteris tremula*, *Scolopendrium vulgare*, *Asplenium bulbiferum*, and *Davallia canariensis*; also of Palms *Kentia* (several species), *Livistona australis* (a Fan-leaved Palm), *Cocos Weddelliana*, one of the most graceful of all Palms, and one that (contrary to the general opinion) will last longer in good condition than a *Kentia*; and *Geonoma gracilis*. If plants have to be cultivated in a room, and cannot be put into the window, and so obtain the maximum amount of sunlight, it is better to choose plants that have ornamental foliage in preference to flowering plants. There are just a few flowering plants that will succeed pretty well, such as *Clivia* (*Imantophyllum*), *minia* a, &c.; but they are not so satisfactory as *Ficus elastica*, *Araucaria excelsa*, *Grevillea robusta*, and the plants already mentioned.

Creepers Suitable for Training Round the Outside of Windows in Summer.

<i>Maurandya Barclayana</i> ,	<i>Lophospermum scandens</i> ,	<i>Tropæolums</i> ,
	<i>Convolvulus major</i> ,	<i>Cobæa scandens</i> .
	<i>Canary-creeper</i> ,	

ORCHIDS FOR AMATEURS.

IF the amateur has a little house for the cultivation of a few species of Orchids that do not require high temperatures, it should be span-roofed and run from north to south. The structure should be provided with means of affording top, side and bottom ventilation. If the house has a lean-to roof, its aspect should be north, north-east or north-west. It will be necessary to provide the house with hot-water pipes to maintain the temperature at night in winter to 45 degs., in spring to 50 degs.; in summer the temperature will need to be kept as low as possible, and in autumn it should not fall below 50 degs.

In such a house, when provided with the staging, &c., necessary, many species, hybrids and varieties of low-priced Orchids may be grown perfectly. Representative species could be selected from the following genera, among others, *Odontoglossum*, *Oncidium*, *Sothronitis*, *Masdevallia*, *Vanda*, *Maxillaria*, *Epidendrum*, *Disa*, *Cypripedium*, *Cœlogyne*, *Lælia*, *Anguloa*, *Ada*, *Pleione*, and *Dendrobium*. By far the commoner species in an amateur's collection is that of *Odontoglossum crispum*, a choice variety of which is shown in Fig. 75. When the amateur buys imported plants at the sale rooms, or through a nurseryman, he may occasionally secure such a variety for a few shillings only, because the imported plants not having flowered since importation no one knows

exactly what varieties of the species they may prove to be. In potting a plant of *Odontoglossum crispum*, the pot should be three-parts filled with broken crocks for drainage, and the compost to be used for the plant to root into should consist of fibrous peat and *Sphagnum*-moss, adding a few finely-broken crocks and some silver-sand. Put a few



Fig. 75.—A handsomely-marked specimen of the Coolhouse Orchid *Odontoglossum crispum*. Scale of inches.

living heads of *Sphagnum*-moss upon the surface. When finished the base of the plant should rest on a cone-like elevation, an inch or so above the rim of the pot. All Epiphytal Orchids also should be potted in this manner, if they are put in pots at all, but many of them succeed best in pans, or on pieces of wood, fern stem, &c. *Cypripedium insigne* is an excellent Orchid for the amateur's house, and is a species that does not require to be raised above the rim of the pot. The pots for this species should be nearly one-third filled with drainage material, and the roots of the plants should be afforded a compost of two parts Peat, one

part chopped Sphagnum-moss, one part well decayed leaf-mould and rough silver sand. *C. insigne* is sometimes treated successfully with manures, but we advise the amateur to be exceedingly careful in applying manures to any Orchid, even to a terrestrial species as *C. insigne*.

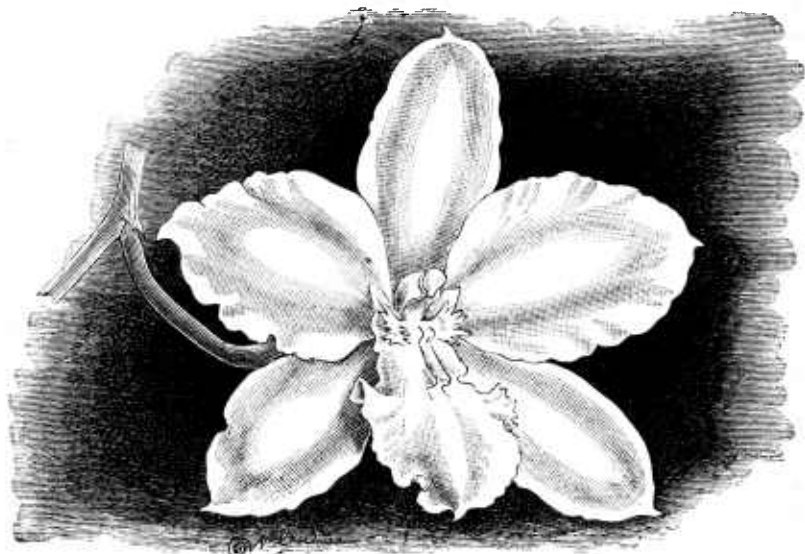


Fig. 76.—A white variety of *Odontoglossum pescatorei*.
A cool-house species requiring the same treatment as *O. crispum*.

VEGETABLE COOKERY, &c.

IN preparing vegetables for cooking, care should be taken to thoroughly wash them. Cauliflower, Cabbage, Spinach, &c., should remain some time in cold water, in which a handful of salt has been melted; this will cause insects to leave them, however close their hearts may be. Rain-water should be used to boil them in if it can be got, as many kinds of hard water will spoil the colour of greens. Another important thing is to have the water boiling when they are put in, cook them quickly, leave the lid of the saucepan off, take them from the fire the moment they are done, and drain the water well from them.

Broad Beans may be boiled with bacon or pickled pork until they are tender; but some persons do not like to boil them together, as the colour of the Beans is changed by the meat. If the Beans are boiled

alone, a bunch of Parsley should be put in with them, to be chopped and served in their sauce, which is composed of a little flour and water, with a bit of butter and finely chopped Carrot, boiled together.

Beans (Kidney).—First string them—that is, remove the tough thread-like part that joins the backs and fronts of the pods: then cut them in four, lengthwise, and put them into the water, which must be boiling, with a little salt. Kidney Beans are pickled in the same manner as Cucumbers. The green kinds and the Butter Beans, which are yellow even when young, are better food when served in a sauce, especially for children.

Kidney Beans and *Scarlet Runner Beans* may be preserved for use throughout the winter by gathering them on a dry day, cutting them in the same manner as for cooking, and placing them in a large jar, with first a layer of Beans and then a layer of salt, until the jar is full; then tie a piece of paper over the top, and set the jar in a dry, airy place; and when the Hundredfold White Haricots are grown as seed for winter consumption they form an excellent and much more sustaining food than Potatos. They should be eaten with a butter sauce.

Beet Root is a very wholesome vegetable. Before boiling, wash clean, but do not cut or break the roots. Boil from three-quarters of an hour to an hour and a half, according to the size of the roots. Then pare and cut into slices; it is good with either hot or cold meat. Pour a little vinegar over what remains, and it forms a nice mild pickle, but it will not keep more than ten days or a fortnight.

Broccoli and Cauliflowers.—The heads should not be broken up, but if the stalk be thick and hard, it should be cut an inch deep, crosswise. It is best to put the stalk end downwards in the pot and to let the heads be steamed. If the small sprouts are tied in a bunch they are quicker taken out of the water when done; they require particular watching, as they will fall in pieces if over-boiled. Some salt must be put into the water with them. Cauliflowers are pickled in exactly the same manner as Cabbage, omitting the Beet Root, which would colour them.

Cabbage, Brussels Sprouts, Borecole, and other greens are cooked in a similar manner to Cauliflowers and Broccoli, and may be made more delicate in flavour, by changing the water once during the process of cooking.

Cabbage (Red) makes an excellent pickle. Shred the heart of a Cabbage in thin slices into a colander, sprinkle a layer of salt over each layer of Cabbage, let it drain for two days, and then put it into a stone jar with a slice of Beet Root. Boil as much vinegar as will cover it, add a handful of peppercorns, a little ginger and allspice, and then pour the vinegar over the Cabbage. When cold, tie it safely down with parchment. It will not keep its colour for longer than one month.

Celery is usually eaten raw, or it may be used to flavour broth, &c.; and if a few heads are cleaned and cut into pieces four or five inches long, and stewed tender, serving them with a little milk, flour, and butter, seasoned with pepper and salt, they are delicious.

Celeriac is cut into slices and cooked till tender. It may also be eaten cold, cut up like Cucumber, and seasoned. This root is excellent for use as flavouring late in winter, when Celery is past.

Carrots, after they have been properly scraped, are usually boiled with salt beef or pork, and in broths or soups; in either case they require a good deal of boiling. They are very nice cut into small dice and stewed in a little good broth, and served with browned Onion and dripping or butter sauce.

Cucumbers possess little value as food, yet in the form of pickles they give a nice relish to a cold dinner in summer. They are also very good if peeled, cut into slices, and covered with salt for a little time; when this salt brine is poured off, add vinegar and pepper according to taste.

Gherkins, or Small Cucumbers—to Pickle.—Lay them in salt and water for five days, then put them on a sieve to drain; afterwards place them in a clean iron or bell-metal saucepan; when all are put in, spread over the surface a good layer of salt and a cupful or more of vinegar according to the quantity to be pickled; fill the pan with cold spring-water, and set it near the fire, where the liquid will simmer but not boil. They will then after a short time become green; then take them out, rinse in clean water, dry with a cloth, put in jars, and pour boiling vinegar over them. The next day pour off the vinegar, re-boil it, and again pour it over them, when ginger and peppercorns should be added. Keep the jar covered, and after a day or two tie them safely down with bladder.

Mushrooms, to Pickle.—Take the small button Mushrooms, wash in cold water, take away the stalks, and then rub them with salt; put them in vinegar, with allspice, ginger, mace, and a little whole pepper; give them a slight boil, then put in jars or bottles, and when cold, cover safely down for use.

Mushroom Ketchup.—Wipe the Mushrooms, lay them in a dish, and on every three handfuls spread a handful of salt; when well dissolved, pour the whole into a large saucepan, and let the liquor simmer for a short time over a slow fire. Strain and boil again with allspice, peppercorns, Shallots, Horseradish, then strain into a jar, and when cold cork it safely and tie vegetable parchment or stearine paper (sold for the purpose by the stationers) over the corks.

Mushrooms are also very nice if peeled and stewed in water with a little flour, pepper, salt, and a bit of butter or dripping.

Onions and Leeks, as is well known, are not only savoury, but wholesome, and used in ways too numerous to mention here; but weakly persons should never eat them raw or fried. Large ones stewed for two hours gently in a little broth, having been first fried brown and dusted with flour, then seasoned with salt and pepper, are savoury; large ones are also very nice when roasted with their skins on, and eaten with salt and butter, or stuffed with seasoning and baked. If scalded with boiling water before being cooked a good deal of the acridity may be removed.

Onions, to Pickle.—Lay them for a short time in scalding water, then take off the outer skins, dry with a cloth, and put in the bottles, with some peppercorns and allspice. Boil some vinegar; when half-cold pour it over them, and after a few hours cork up the bottles and tie them safely with parchment.

Parsnips.—This vegetable is very nutritious and profitable. After

they are scraped, cut them down the middle, and boil them tender. They may either be served whole, or mashed with a little milk and butter, adding pepper and salt.

Peas.—These should not be boiled in too much water, but use just enough to cover them, taking care not to overdo them. A bunch of Mint or Savory and a teaspoonful of sugar should be boiled with them, with a piece of butter. If gathered green and dried they are much better for soup than when left to become ripe. Peas are excellent when cooked in just enough broth to cover them.

Potatos.—It is well known that a good Potato may be spoiled by bad cooking, and by good management a bad one may be rendered comparatively good. In fact, the quality of no vegetable depends more on the cooking than a Potato. In the first place, if the skin is taken off before boiling it should not be peeled, but scraped, for the following reason: if peeled, it is made smaller; besides the outside removed is the best portion of the tuber. The best way is, first, to wash them very clean, then put them on the fire in an iron saucepan, with just cold water enough to cover them; when it has begun to boil add a teaspoonful of salt, and add a pint of cold water, which checks their boiling, and gives them time to be done through without allowing them to crack. As soon as done—rather under than over, which may be ascertained by sticking them with a fork—pour off the water, and put the pan on the fire again for a short time, until the remaining moisture is sent off. If not immediately wanted, do not place the lid upon them or the steam will be confined, but cover them with a cloth; new Potatos require great caution not to overboil them, or they will be tasteless and watery.

Potatos to Mash should be boiled first as above, then peeled, afterwards broken smooth, adding a little milk and salt; a piece of butter or beef dripping will improve them greatly.

Potatos to Roast should be of the largest size, and be first half boiled, then have the thin skin peeled off, and afterwards roasted to a fine brown colour.

Potatos, when left cold, may be cut into thin slices and fried in butter or dripping.

Rhubarb makes excellent puddings and pies; the leaf-stalks are cut into small pieces; sweetened with sugar or treacle; or the pieces may be stewed in sugar and water till tender, and eaten with boiled rice, &c.

Sea-Kale.—The heads should be tied together and laid in cold water for an hour, then be put in boiling water, adding a little salt, and well boiled, and afterwards drained dry. A slice of toasted bread is usually placed on the dish under them, and a sauce made of a little milk, flour, and butter poured over them.

Spinach is cooling, wholesome, and anti-scorbutic. It requires no water to boil in, except what remains attached to the leaves after rinsing, adding a little salt when done and draining the water off. A little butter may be eaten with it.

Turnips and Swedes are good vegetables for consumption with boiled meat. Wash, peel, slice, and boil them until quite soft, then

mash with a little butter, pepper, and salt. They may be cooked like Carrots, in a sauce.

Lentils, well boiled, constitute by far the most nutritious vegetable food that can be eaten, and the cheapest, but some persons find them indigestible.

FRUIT COOKERY, &c.

Apple Dumplings are made by putting about four ounces of chopped beef suet, or two ounces of dripping or lard, into eight ounces of flour, and adding as much water and a little salt as will make it into a stiff paste. Roll it out large enough to hold the Apples, which must be pared and cored; fold the paste over them, tie in a pudding cloth, and boil for an hour and three-quarters. Sweeten, either with treacle or sugar.

Apple and other fruit pies are made by cutting the Apples and putting them into a dish, and covering the top with some of the paste rolled out as above.

Apple Pudding Baked.—Rub the bottom and sides of the pie-dish with suet or butter; put a layer of bread crumbs, and upon these a layer of Apples cut into quarters; then another layer of bread and another of Apples until the dish is filled, having the top layer one of bread. Sprinkle the surface with brown sugar, melt some butter or lard in a little water or milk, and pour it over. Bake for an hour in a slow oven.

Cheap Fruit Pudding.—A good roll pudding may be made as follows: Prepare a nice light paste, roll it out thin, then spread some treacle and a few currants over it, or a little blackberry jam; roll it up, and put a cloth round it, and boil for one or two hours, according to the size.

Currant Jam.—This may be either made from Black or Red Currants. To each pound of fruit add three-quarters of a pound of sugar; boil for one hour or less, and keep the syrup well stirred. Pour it into preserve pots, and when cold cover it with paper and tie it safely down with parchment.

Raspberry and Strawberry Jams only require boiling half an hour instead of an hour.

Blackberry Jam.—To every pound of fruit, well bruised, add a half-pint of water and half a pound of sugar; boil for three-quarters of an hour in a common saucepan, over a slow clear fire. It is much improved if, when sufficiently done, the juice of one or two lemons is squeezed into it.

Preserving Fruits in Bottles.—In a season when stone fruits (Plums, Damsons, &c.), also Gooseberries, are plentiful, it is a good and an economical practice to preserve part of the crop by bottling the fruits. Take some bottles with air-excluding stoppers, and nearly fill them with carefully-selected fruits. The fruit should be as nearly perfect as possible. Put them into the oven, and let them remain there for a few minutes, until the fruit show first signs of cracking, then pour boiling water over them and seal the bottles at once. This is a very simple

method, and there being no sugar used the fruits remain as nearly as possible in a condition similar to that of fresh fruits.

Soups.—M. Soyer's economical soup No. 1 is prepared as follows :—Put into a saucepan, capable of holding two gallons of water, one ounce of dripping with a quarter of a pound of leg of beef without bones, and cut into square pieces of about half an inch, with two middling-sized Onions, peeled and sliced. Set the saucepan over a fire, and stir the contents round for a few minutes until fried lightly brown. Add the peeling of two Turnips, tops of Celery, and two Leeks, cut into small pieces. Then add half a pound of common flour and half a pound of pearl barley, mixing all well together. Add two gallons of water, three ounces of salt, and a quarter of an ounce of brown sugar, and allow all to simmer gently for three hours. The constituents of this Soup will be as follows :—Quarter of pound of leg of beef ; two ounces of dripping ; two Onions and other vegetables ; half a pound of flour ; half a pound of pearl barley ; three ounces of salt ; half an ounce of sugar.

Cheap Soup.—Take half a pint of split peas, half a pound of rice, half a pound of beef or other meat, six Onions, some herbs, salt, pepper, and four quarts of water. Boil for three hours over a slow fire.

Potato Pie.—Peel and slice as many Potatoes as are required, slice them thin, and put them in a pie-dish, mix sliced Onions, a few slices of bacon or other meat, or, in the absence of meat, a small piece of dripping, and season with pepper and salt.

Sheep's Head Broth.—Skin and split the head, take out the brains, and soak them in water for several hours ; put the head in a gallon of water, add Onions, Carrots, and Turnips, and boil over a slow fire. When the head is done take it out, thicken the broth with oatmeal, and season with pepper and salt. Boil the brains separately in a small saucepan, and when done chop them up with a little boiled sage and butter and salt.

Meat, when tainted, to restore.—Wrap the meat in a clean cloth, taking care that no dirt can get to it ; then take a fire-shovel full of charcoal or live coals from the fire, and pour them into a bucket of clear water, put in the meat, and let it remain for five minutes, and it will become free from smell. It should then be cooked immediately.

To make Pikelets or Hasty Pudding.—Put half a pint of milk and half a pint of water into a saucepan with a bit of butter, a lump of sugar, and a little salt ; set it on the fire, and stir it until little more than new-milk warm ; then beat up two eggs, and add to the milk also about a tablespoonful of new yeast ; pour the liquid into a jug or pan much larger than is necessary to hold the mixture, stir in one pound of flour, and let it stand before the fire to work ; when it has well risen bake over a slow fire, pouring a small quantity on the baking-iron at a time.

Pea Soup.—Take about half a pound of bacon and cut it in small pieces, two quarts of water, one pint of split Peas, one or two nice Carrots, two Turnips, and two Onions ; cut all into small pieces ; set them on or by the fire, and let the soup simmer until the peas are quite tender. Season with pepper and salt according to taste.

Eggs, to Preserve.—Take any quantity of fresh eggs, and cover them and keep them upright in salt ; by this means they will keep good for a year.

PIGS.

If you desire simply to make use of the small potatoes, and other waste of a garden which is abundant in autumn, purchase a young hog or two off the stubbles, put them in the sty, and ultimately give them barley meal along with steamed food and garden waste. For pork, the smaller white or black breeds are preferable; for bacon the Berkshire is unrivalled. The animals will eat cabbage leaves, beet, or mangel, Swedish turnips, and garden refuse generally. Give them a pound of pea or bean meal daily apiece—along with their green stuff. And when approaching maturity give barley meal—ultimately, five, six, or seven pounds a day apiece—along with the house wash and steamed food. Keep them clean and dry and warm. Pigs should be regularly fed at least three times a day, and their troughs should be well cleaned each time. Why they should be so fed is that they may be constantly in a state of rest, as in that case they fatten in a shorter time. Corn-fed pork is the best. The bean- and acorn-fed pork, however, are both hard, and the potato-fed (in the usual way) is very loose. A porker will eat four or five pecks of common meal per week in fattening; and a baconer (in proportion to its size) a bushel per week. By all means make the latter quite fat, because lean bacon is the most unprofitable thing which any family can use. A porker should be fatted in the course of a month or six weeks at the longest, and a baconer in ten or twelve weeks. A pig or hog should have no food the day before killing. It is frequently observed in fattening hogs that they pay better for their keep in the latter part than in the early part of their fattening.

It has been found that roasted potatoes are excellent food for pigs. The pork produced is equal to that from barley or oats; if so, the roasted or baked potatoes (considering the improvement of the hogs) is the cheapest food that can be given them.

When the hog has been killed, the first thing to be done is to get the hair off. Scalding and scraping is the common method; but singeing, as practised in Berkshire, Hampshire, and Worcestershire, is preferable.

It must be admitted that the hog is altogether a capital thing on a poor man's premises, inasmuch as bacon, either cold or hot, may be carried to the field or coppice conveniently. In harvest and other busy times sufficient may be boiled to last a week; it has twice as much savour as any other meat of the same weight. One pound of bacon, such as here described, in such a family, will go at least as far as two pounds of ordinary beef or mutton, a great part of which is bone, and, in short, is gone in a very few minutes. Good fat bacon, if less nutritious and less easily digested than other meat, is, on the whole, the cheapest and the best of animal food for the labourer, and lentils, properly cooked, the cheapest and best vegetable food, being nearly as nourishing as meat. A combination of lentils and bacon is to be recommended, as the one food supplies the deficiencies of the other. Beans and bacon, as the labourer has long ago found out, constitute an excellent and nourishing diet for those whose digestion is strong enough to enable them to eat them.

Hogs may be purchased in the month of March. The cost till fattening time is next to nothing to a cottager; and then the cost would, for a hog

of 20 to 25 stone, not exceed perhaps 60s., and in the whole from 80s. to 84s. Let the poor man recollect that more money is thrown away on beer or tea, for the cost of which, if laid aside, the labourer might supply his family well with bacon.

When the hams have lain three days, rub them with an ounce of salt-petre each; and when they have lain a week from the time of killing the pig, lay them in the following pickle:—One pound of bay salt, one pound of coarse sugar, one handful of common salt boiled in half a pint of vinegar; pour it over them boiling hot, rubbing it in well with the hand when cool. Let them lie a month, turning them daily.

Tenants should apply to their landlords to assist them by building suitable pig-styes; and in the month of March the tenants should assist their labourers (working constantly on the premises) in the purchase of a pig, and let that pig run about the yard until it is fit to fatten. If there is no cottage sty, help ought to be found at the farm homestead. The cottager's pig might be kept there in the sty and fed upon pea and barley meal till it weighs from 20 to 25 stone, during which time the tenant should keep a strict account of the cost, and weekly deduct out of each man's wages the amount thereof and of the feeding, for which the tenants should have the full benefit of the manure of these animals. When each hog is killed it should be divided between two labourers, who shall pay the amount of the balance for keep, &c., if any, to his master, before he proceeds to take away his share of the hog. This plan keeps up the good feeling between the farmers and their labourers.

To this we add an extract from one of Mr. S. Sidney's Berkshire correspondents, quoted in his capital work on the Pig (Routledge). "My stores farrowed in March are fatted by December, making from ten to twelve scores, although I have often had them much heavier. Second litters in December will do in three months for pork." He feeds with meal and whey, which the cottager cannot have. He adds, however, "If I am well off for roots I have a good quantity steamed, prepared, and mixed with barley meal; in the winter with a few beans or lentils unground. If convenient, give warm food. Have not more than six pigs together, in warm styes, clean, and the pigs well groomed with brush and linseed oil, which will cleanse the skin and kill the lice with which they are often annoyed." Another pig-feeder pulps roots, lets them ferment for thirty-six hours, and then puts meal to it for food. And we add Mr. Sidney's dictum—notwithstanding its rosy colour:—"Every cottager with a family should purchase in the spring or summer a bacon pig, to cost about a sovereign [or 50s. in September] to be fed up to about twenty-four score at Christmas [twelve will be more like the truth]. The hams he can sell to buy another pig, and the rest will remain for his own consumption, without seeming to have cost anything. There is no savings bank for a labourer like a pig. Every week a shilling should be spent in meal, and this, with a pig of good sort, will make him grow and keep fresh, and require very little to finish off with at last."

FOWLS.

THE great majority of cottagers are so circumstanced that they might keep a few fowls at very little expense. The return they would afford in supplying eggs for the table or for sale, together with their value when killed, would be more or less profit, varying in amount according to the opportunities the fowls could be given for picking up part of their food in the neighbouring road-sides and fields. In order to obtain the best returns from them it is necessary to provide a warm house for the fowls to roost in at night; one in which they will be quite safe from foxes, and where there are no cold draughts, which would prevent the hens laying in cold weather in winter, when eggs are most valuable. This house should be provided, at 18 inches from the ground, with flat wooden perches 3 inches by 2 inches. The floor of the house should be made of beaten earth, and a little fresh lime may be scattered over this each morning. The next essential matter is that of cleanliness. The droppings should be removed from the house each day, and occasionally the perches must be dressed with paraffin to keep them quite free from lice, which, when numerous, are sufficiently irritating to the hens to prevent them laying so well as they should do. This house must be provided with means of ventilation, and if it can be thrown open during the day so much the better. For the cottager's purpose such breeds should be chosen as will afford a good supply of eggs, and be also good for consumption when killed. Such a bird, suitable for the southern counties, is that obtained from the first cross between the Game and Dorking, or between the Dorking and Plymouth Rock. The Orpington will also be found to be a good "all-round" breed. If the best laying breeds are desired, then choose the White Leghorn, or the Black Minorca, but it should be remembered that if these be quite pure they will not become broody, and it will be necessary to provide other means for hatching out the chicks. Do not keep any birds after they are two years old, as they would lay fewer eggs than younger birds and be next to useless when killed. In fattening young cockerels, it will be necessary to prevent them from running with the pullets.

The value of the manure from fowls is referred to on p. 120, and by allowing them to run over the orchard they will pick up many grubs and other insects that would be injurious to the fruit-trees.

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